

STUDIES ON EDUCATION, SCIENCE, AND TECHNOLOGY 2023

Editors

Dr. Hamza Polat

Dr. Abid Ali Khan

Dr. Muhammet Dursun Kaya



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PREFACE

We're delighted to introduce "Studies on Education, Science, and Technology 2023." In this extensive collection, we take a trip through the various aspects of education, exploring the complex connections between technology, science, and the changing teaching methods that influence our world.

The ten chapters in this compilation showcase the combined work of respected authors worldwide, hailing from Oman, Indonesia, Bangladesh, the United States, the United Kingdom, Nigeria, and the Philippines. Together, their contributions weave a fabric of perspectives and research that capture the forward-looking aspects of our educational and technological environments.

In Chapter 1, "Adaptive Learning in Higher Education: Implementation, Challenges, and Opportunities," the authors delve into the dynamic realm of adaptive learning, unraveling its potential to personalize education and the challenges encountered in its implementation. This chapter invites readers to explore the evolving landscape of tailored learning experiences.

Chapter 2, "Metacognitive Regulation in Collaborative Problem-Solving: A Bibliometric Analysis and Systematic Literature Review," conducts a comprehensive examination of metacognitive regulation within collaborative contexts. The authors employ bibliometric analysis to illuminate key trends, authors, and triggering situations, offering valuable insights into this burgeoning research area.

Moving to the realm of language education, Chapter 3, "Influence of Authentic Materials in English Language Teaching on the Writing Proficiency of Rural High School Students in Bangladesh," underscores the impact of authentic materials on writing proficiency in a Bangladeshi context. The authors showcase the transformative influence of real-world language use on both teachers and students.

In Chapter 4, "The Indian Knowledge, Western Education Program: An Indigenous Community-Led College Faculty Training," the focus shifts to an innovative faculty training program that bridges Native American perspectives with Western education. This collaborative endeavor enriches academic discourse by integrating indigenous voices into contemporary education.

Chapter 5, "Gluskape: A New England Indigenous Cultural Hero Whose Stories Impart Traditional Philosophy," explores the rich tapestry of Wabanaki culture through the lens of Gluskape, presenting a nuanced perspective on creation stories and the role of cultural mediators in indigenous belief systems.

The impact of social issues on international relations takes center stage in Chapter 6, "The Impact of Xenophobia on the Bilateral Relations of Nigeria and South Africa." The authors critically examine the ramifications of xenophobia, offering a theoretical framework to understand its effects on Nigerians and the strained bilateral relations between Nigeria and South Africa.

Chapter 7, "The Rationality of Rational Institutions," challenges conventional sociological perspectives by integrating anthropological insights. This thought-provoking chapter explores the intricate relationship between human agency and macro structures, shedding light on historical influences shaping modern institutions.

In Chapter 8, "MOOC Camp-based Flipped Learning in Higher Education," the authors explore the integration of Massive Open Online Courses (MOOCs) into traditional classrooms, presenting an alternative pedagogical approach that combines MOOCs with flipped learning. This innovative method addresses challenges such as the digital divide while fostering anytime-anywhere learning.

Chapter 9, "The Excellent CSR Companies' CSR Communications in Social Media in the early COVID-19 Era," provides a timely examination of how top-rated companies in corporate social responsibility navigate crisis communication during the early COVID-19 era. The authors offer valuable insights into the strategic communication choices of leading CSR companies.

Finally, Chapter 10, "The Trends Internet of Things in Physical Education: A Scientometric Review," ventures into the realm of the Internet of Things (IoT) and its impact on physical education. This scientometric review offers a comprehensive analysis of trends, key authors, and institutions contributing to this evolving field.

Together, these ten chapters weave a tapestry of diverse perspectives, enriching our understanding of the intricate interplay between education, science, and technology. We extend my sincere gratitude to the authors for their invaluable contributions and hope that readers find this compilation both enlightening and inspiring.

Hamza Polat, Abid Ali Khan & Muhammet Dursun Kaya

The editors

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SECTION I - STUDIES ON EDUCATION

Chapter 1 - Adaptive Learning in Higher Education: Implementation, Challenges, and Opportunities

Tariq Hussain , Abid Ali Khan , John Regan Pillai , Mohamed Al Siyabi 

Chapter Highlights

- Adaptive learning refers to a system's ability to tailor the learning experience to individual learners' needs and abilities.
- There are several models of adaptive learning that can personalize the learning experience. The rule-based model can make decisions on content, layout, and feedback to optimize the experience.
- Designing an adaptive learning system involves key steps such as assessment, data collection, analysis, personalization, feedback, and progress tracking to ensure that the learning experience is tailored to the individual student's needs and goals.
- Evaluation of the effectiveness of adaptive learning involves setting clear learning objectives, collecting and analyzing data, using a variety of assessment methods, comparing student outcomes, seeking feedback from students and instructors, and evaluating cost-effectiveness to make informed decisions about its continued use and identify areas for improvement.
- Challenges of implementing adaptive learning systems include data collection and analysis, personalization, scalability, evaluation and assessment, privacy and security, and technical challenges.

Introduction

The term “Adaptive” refers to the ability to change or adjusting to different conditions or situations. In the context of technology or systems, it often refers to the ability of a system or algorithm to learn and improve its performance based on new data or feedback. Intelligence is a multifaceted concept that may refers to the ability to learn from experience, understand and adapt complex situations. In the field of artificial intelligence, intelligence describes to the ability of a machine or computer system to simulate or reproduce human intellectual abilities, such as learning and problem-solving. This can include the use of techniques such as machine learning, natural language processing, and computer vision. Additionally, there are many different theories of intelligence, each of which has its own definition and criteria for what establishes intelligence.

Adaptive learning in higher education refers to the use system’s functionality to tailor the learning experience to the needs and abilities of individual learner (Bienkowski, Feng, & Means, 2012; Paramythis & Loidl-Reisinger, 2003; Thyagarajan & Nayak, 2007; Vovides, Sanchez-Alonso, Mitropoulou, & Nickmans, 2007). Adaptive learning can be achieved through various means, such as using artificial intelligence, data and analytics to adjust the content and pace of instruction, or by providing students with personalized feedback and resources (Alam, 2022; Chassignol, Khoroshavin, Klimova, & Bilyatdinova, 2018). The main aim of adaptive learning is to improve learner’s engagement and outcomes by providing a more personalized and effective learning experience. This is an emerging and innovative trend in higher education, with more and more universities and colleges tend to adopt adaptive learning technologies to enhance their curriculum and support student success (Alam, 2022; Ali, 2020; Kezar, 2011; Muñoz et al., 2022).

Models of Adaptive Learning

There are several models of adaptive learning that have been developed to personalize the learning experience for individual users. Each model has its own advantages and disadvantages, and the selection of the model depends on the application and the educational context. The following few models are important to understand.

Rule-based adaptive learning model

The rule-based adaptive user interface can make decisions on what content to present to the user, the order in which the content is presented, the level of difficulty of the content, and the type of feedback provided (Kolekar, Pai & Technologies, 2019). It can also adapt the interface layout, navigation and other features to optimise the user experience (Su, 2020). The system can learn from the user's interactions with the interface and adjust over time to improve the effectiveness of the learning experience.

Model tracing adaptive learning model

An evidence-based learning model with artificial intelligence (AI) involves using AI technologies to gather data on students' learning behaviour and outcomes (Greenhow, Galvin, & Sciences, 2020). The obtained data is then analysed to inform decisions about instructional design and delivery, with the goal of improving student outcomes (Greenhow et al., 2020). AI technologies can be used to provide real-time feedback to students, adapt the learning environment to individual student needs, and personalize learning experiences based on students' strengths and weaknesses (Shemshack & Spector, 2021). The use of AI in an evidence-based learning model can also help educators make data-driven decisions, as well as identify areas where additional support learner may need.

Cognitive model

A cognitive model is a type of model that aims to simulate certain aspects of human cognition (Huo et al., 2021). This can include things like perception, attention, memory, reasoning, and decision making. Cognitive models has a variety of use in a wide range of fields, such as artificial intelligence, cognitive psychology, neuroscience, and linguistics (Hamal, El Faddouli, Harouni, & Lu, 2022). This model can understand how humans process information, to design more human-like artificial systems, or to study and treat cognitive disorders. Cognitive models can be implemented in a variety of ways depending on situation, such as mathematical models, computer simulations, or physical models. They are based on theories or empirical data from cognitive psychology or neuroscience. Cognitive models are different from other types of machine learning models as they are not only focused on making predictions but also on understanding the underlying cognitive mechanisms that drive

the human decision-making process(Gueguen, Schweitzer, & Konova, 2021).

Bayesian model

A Bayesian model is a type of statistical model that is based on the principles of Bayesian statistics (van de Schoot et al., 2021). These models use Bayes' theorem, which is a mathematical formula that describes the relationship between prior beliefs and new evidence, to update their predictions or estimates. Bayesian models are particularly useful in situations where there is uncertainty or incomplete information, and they are widely used in fields such as machine learning, computer vision, natural language processing, and many other areas (Fan et al., 2020). In a Bayesian model, the parameters of the model are treated as random variables, and the model is updated using Bayes' theorem as new data becomes available. The prior probability distribution representing the model's initial beliefs about the parameters, is updated using the likelihood function. It represents the probability of the data given in the parameters, and the posterior probability distribution is obtained. This posterior probability distribution represents the model's updated beliefs about the parameters after observing the data (Fan et al., 2020). One of the main advantages of Bayesian models is that they can naturally incorporate prior knowledge and account for uncertainty in the estimates. It also allows to perform model selection and model averaging. Bayesian models are used in many areas of machine learning, such as Bayesian neural networks, Bayesian decision theory, Bayesian reinforcement learning and so on (Abbasimehr, Paki, & Fractals, 2021).

Hybrid model

It is a type of machine learning model that combines the strengths of multiple types of models to improve the overall performance (Liu, Yu, Wu, Duan, & Yan, 2020). The idea behind a hybrid model is to leverage the strengths of different models to overcome their individual limitations. Hybrid models are widely used in variety of different applications, like image and speech recognition, natural language processing, and many other fields. These can improve the performance, robustness and generalization of the model, and in some cases, overcome the limitations of individual models (Liu et al., 2020).

Designing Adaptive Learning

Designing an adaptive learning system involves diverse key steps depending on the requirement. A step-by-step explanation of how adaptive learning works is given below (S. Graf, Lin, & McGreal, 2011):

Assessment. The adaptive learning process begins with an assessment of the learner's current knowledge, skills, and abilities. This can be done through pre-tests, quizzes, or other forms of assessment.

Data Collection. As the student progresses through the course, the adaptive learning system collects data on their performance, including how long they take to answer questions, which questions they get right or wrong, and which topics they struggle with.

Analysis. The system then analyses the data to identify patterns and trends in the student's learning behavior. Based on this analysis, the system can determine which topics the student has mastered, and which ones they need more help with.

Personalisation. Using the data and analysis, the system adapts the learning experience to the individual student. This may involve presenting the material in a different way, providing additional resources, or adjusting the difficulty level of the questions.

Feedback. The system provides immediate feedback to the student on their performance, including their weaknesses and strong areas of their studies.

Progress Tracking. The system tracks the student's progress over time and adjusts the learning experience as necessary to ensure that they are making progress toward their learning goals.

Adaptive learning systems can be applied from secondary classrooms to higher education and corporate training. They can be useful for students who are struggling, as well as for students who are advanced and need to be challenged. The designing system depends on the situation and depending on identification of learning objectives, developing content and assessments, collecting data on learners, creating learner profiles, implementing adaptive algorithms, monitoring and refining the system based on feedback. The designing process should consider careful planning and understanding of individual learners' preferences and needs. Adaptive learning systems help learners achieve their goals more effectively and efficiently through personalized learning experiences.

The role of analytics in adaptive learning

Analytics plays an important role in the success of adaptive learning systems. By collecting and analysing data on learner behaviour, preferences, and performance, learning analytics can provide insights to designing and implementation phase of adaptive learning systems. One of the main advantages of learning analytics is the ability to create learner profiles with the help of analysis of data on each learner's progress, preferences, and learning style (Long & Siemens, 2014; Siemens & Long, 2011). This data is used to personalise the learning experience by adapting the content and delivery to meet the needs of each learner. Analytics can also use to identify patterns and trends in learner behaviour that can be used to enhance the adaptive learning system (Romero, Ventura, & Discovery, 2020; Siemens, 2013). As an example, analytics can be used to identify which types of content are most effective for different learners, or which adaptive algorithms are most successful in improving learner outcomes. In addition to improving the effectiveness of adaptive learning systems, the analytics can also be used to evaluate and improve the system itself. By analysing data on learner performance, instructors and system designers can identify areas for improvement and make changes to the system design to better meet the needs of learners (Carter, Rice, Yang, Jackson, & Sciences, 2020).

Importance of data in adaptive learning

The data in adaptive learning considered as critical component of adaptive learning systems because it provides the information necessary to personalize the learning experience for each individual learner (Aroyo et al., 2006; Weber & Brusilovsky, 2016). By collecting data on learner preferences, behaviour, and performance, adaptive learning systems can adapt the content, pace, and sequence of instruction to match the needs of each learner (Bienkowski et al., 2012). One of the primary benefits of user data is the ability to create learner profiles which can be used to customize the learning experience by adapting the content and delivery to meet the unique needs of each learner (Bocchi, Eastman, & Swift, 2004). As an example, if a learner struggles with a particular topic, the system can suggest the related additional resources or support to help them master the concept (Bocchi et al., 2004). Additionally, by analysing data on learner behaviour and performance, designers and instructors can identify areas where the system can be improved such as adjusting the adaptive algorithms, adjusting the content or delivery, or adding new features or resources.

Personalisation in adaptive learning

Personalisation is a key feature of adaptive learning, and it helps to involve learners, improve learning outcomes, and increase efficiency (Nkambou, Bourdeau, & Mizoguchi, 2010; VanLehn, 2011). However, it must be balanced with the need to provide a comprehensive and well-rounded education. Personalisation can be achieved by collecting and analysing data on learner behaviour, preferences, and performance, and using this data to adapt the content, delivery, and pace of instruction (Peredo, Canales, Menchaca, & Peredo, 2011). The main benefits of personalisation in adaptive learning are that it helps to involve learners and enhance motivation. When learners feel that the content and delivery are tailored to their needs and preferences, they are more likely to stay motivated in the whole learning process (VanLehn, 2011).

Personalisation is also useful for improving learning outcomes by ensuring that learners are exposed to content that is appropriate for their skill level and learning style such as, if a learner is struggling with a particular topic, the system can provide additional resources or support to help them master the concept (Peredo et al., 2011). Additionally, to improving engagement and learning outcomes, personalisation also helps to increase efficiency by reducing the amount of time and resources required for learning (Daradoumis, Bassi, Xhafa, & Caballé, 2013). By providing learners with customized instruction, adaptive learning systems can help learners achieve their goals more quickly and effectively. However, it's important to note that personalization must be balanced with the need to provide learners with a comprehensive and well-rounded education (Kennedy & Odell, 2014). While personalization can be a powerful tool for improving engagement and outcomes, it should not be used to limit or narrow the scope of the learning experience.

Effective Adaptive Learning Design Process

Considering personalised learning, the adaptive learning systems are designed. The designing involves careful planning and consideration of several key factors (Hwang, Tsai, Yang, & Society, 2008). Figure 1 shows the key factors which must be considered while designing (Hwang et al., 2008; Mourali et al., 2020):

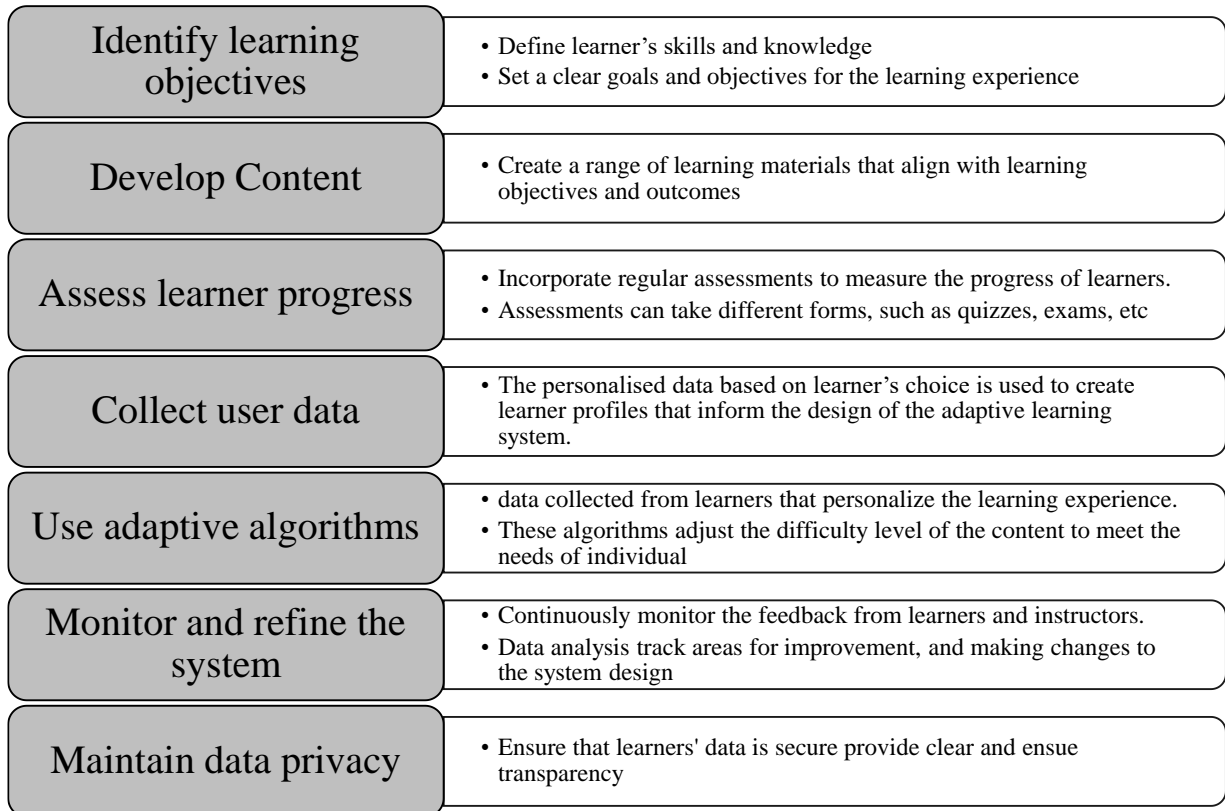


Figure 1: The key factors which must be considered while designing

In addition to these given steps, designers and instructors can add extra features depending on their requirement to create effective adaptive learning systems that provide learners with personalized, engaging, and effective learning experiences that meet their unique needs and help them achieve their goals.

The Implementation of Adaptive Learning

The implementation of adaptive learning requires careful planning, effective content development, and ongoing monitoring and evaluation. By following these steps, educational institutions can create effective adaptive learning systems that provide learners with personalized, engaging, and effective learning experiences that help them achieve their goals (Graf et al., 2011; Graf & Kinshuk, 2014).

Integrating Adaptive Learning into the Curriculum

Integrating adaptive learning into the curriculum can be a challenge, as it involves several

important steps (Truong, 2016). Firstly, educators must identify the areas where adaptive learning can enhance the learning experience, such as courses that have traditionally been difficult for students or areas where students have different learning styles. They must then select appropriate technology, such as a Learning Management System (LMS) with adaptive features or specialized adaptive learning software and develop effective content that aligns with learning objectives and outcomes (Arsovic & Stefanovic, 2020). To personalize the learning experience, the system must be customized using data on learners' preferences, abilities, and learning styles. Additionally, assessments must be developed to measure student progress and provide feedback to learners and instructors. To ensure that the system is used effectively, learners and instructors must be trained and provided with ongoing support. An adaptive hypermedia intelligence-based tutor system is a typical example of educational software that uses artificial intelligence (AI) and hypermedia (interactive multimedia) to adapt the learning experience to the individual needs and abilities of the student (Brusilovsky & interaction, 2001; Butz, Hua, & Maguire, 2004; Butz, Hua, Maguire, & Journal, 2006). The system uses algorithms and data analysis to track the student's progress and adjust the content, pacing, and difficulty of the study material according to learner's needs. It also uses techniques such as natural language processing and machine learning to understand and respond to the student's questions and feedback (Smith, Haworth, & Žitnik, 2020; Woolf, 2010; Zlatkovic et al., 2020). The other capabilities of hypermedia system including to present interactive multimedia content such as videos, images, and animations to enhance the learning experience (Demircioglu Diren & Horzum, 2022; Kim, Soyata, & Behnagh, 2018).

A cognitive process, adaptive learning requires continuous monitoring to ensure its effectiveness, and it should be evaluated based on data on learners' performance and feedback, with any necessary improvements being made. Incorporating adaptive learning into the curriculum can provide learners with personalized, engaging, and effective learning experiences that will help them achieve their goals.

The Challenges of Implementing Adaptive Learning

The implementation of adaptive learning can be a complex and challenging process. It is only possible with the right strategies, resources, and support, so it can provide learners with personalized and effective learning experiences that improve their desired outcomes (Kennedy & Odell, 2014; Lodge, Kennedy, & Lockyer, 2020). One of the main challenges of

implementation of adaptive learning is identifying areas where adaptive learning can be integrated into the curriculum which we have highlighted in the last section. However, the selection of adequate technologies and content is another challenge. With having the wide range of adaptive learning tools and platforms available, it can be difficult to choose the right one that aligns with the learning goals and objectives. Additionally, creating engaging and interactive content that meets the needs of diverse learners requires time, effort, and resources. Personalizing the learning experience can also be a challenging because it demands collecting and analysing data on individual learners' preferences, abilities, and learning styles (Graf & Kinshuk, 2014). This can be time-consuming and complex, particularly for larger classes and institutions. It is important to Ensure that instructors and learners are trained to use the adaptive learning system effectively and providing ongoing support is crucial for success. However, this can be a challenge as it requires significant investment in training resources and ongoing support infrastructure. Like other phases, continuous monitoring, appropriate feedback, and data analysis is an important factor for an effective adaptive learning system. This requires expertise in data analysis and may require additional resources to implement.

The Role of Teachers in Adaptive Learning

The teachers play a critical role in the success of adaptive learning, providing guidance, support, expertise, and personalized instruction to help students achieve their learning goals. While adaptive learning technology can personalize and enhance the learning experience, it cannot replace the expertise and guidance of a qualified teacher (Kerr, 2016). One important role of teachers in adaptive learning is to provide guidance and support to students. Teachers can help students navigate the adaptive learning system, understand their progress and feedback, and provide additional resources or support where needed. They can also use their expertise to identify areas where students may need additional support or instruction.

Adaptive learning data also helpful for teachers to personalize their instruction and adapt their teaching methods to meet the needs of individual students (Kerr, 2016). By analysing data on student progress and feedback, teachers can identify areas where students are struggling and adjust their teaching approach to better support student learning. Another important role of teachers in adaptive learning is to curate and create learning content that aligns with learning objectives and outcomes. While adaptive learning technology can

provide personalized content recommendations, teachers play an important role in selecting and designing learning materials that meet the needs of diverse learners and align with curriculum standards. Teachers can use adaptive learning data to evaluate the effectiveness of their instruction and the adaptive learning system. By monitoring student progress and feedback, teachers can identify areas where the adaptive learning system is working well and areas where improvements may be needed. They can use this information to adjust their teaching approach and to provide feedback to the institution or technology provider.

Evaluating the Effectiveness of Adaptive Learning

Like any other system it is important to evaluate the effectiveness of adaptive learning to understanding its impact on student learning outcomes and to take necessary decisions about its continued use (Fuchs & Fuchs, 1988). Figure 2 explains some strategies that can be used to evaluate the effectiveness of adaptive learning (Martin, Chen, Moore, Westine, & Development, 2020):

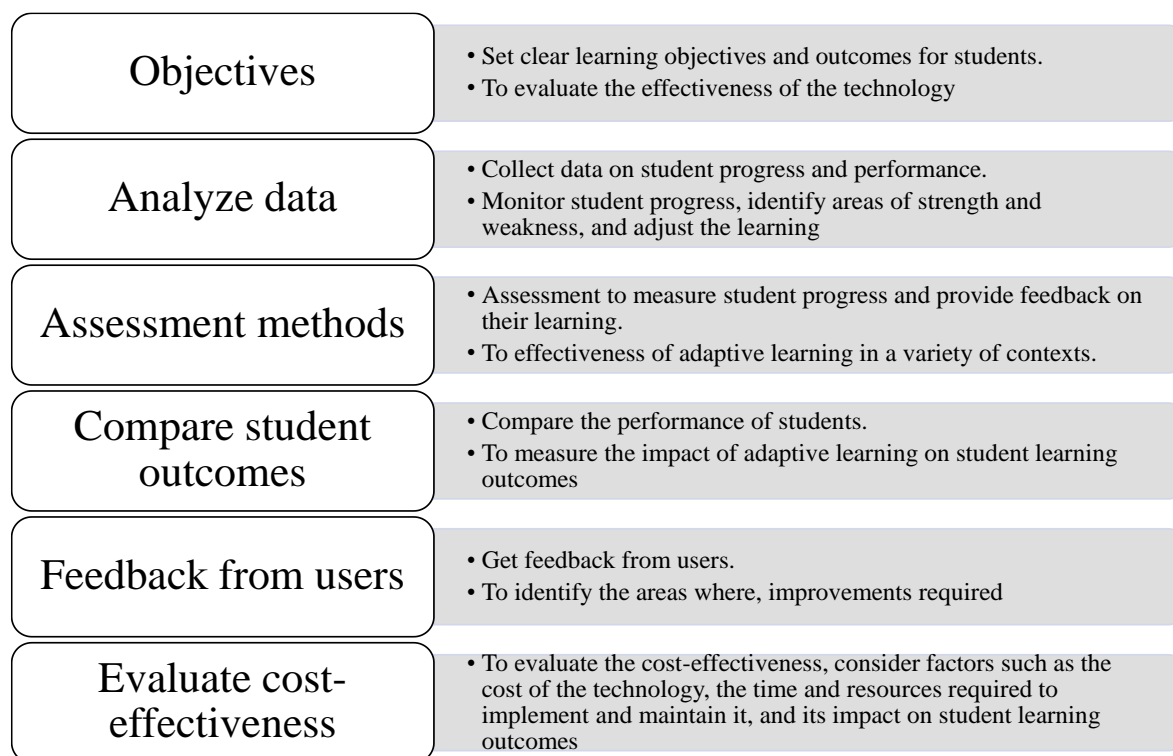


Figure 2: Strategies that can be used to evaluate the effectiveness of adaptive learning

These are general guidelines; however, educators and institutions can involve other strategies

to evaluate the effectiveness of adaptive learning about its continued use and identify areas for improvement.

Examples of Adaptive Learning in Practice

Adaptive learning is being used in a variety of educational settings, from secondary schools to higher education, and it proves as a promising way to improve student learning outcomes and engagement. This section gives few examples of adaptive learning in practice from secondary school to higher education and learning in corporate training.

Summit Learning Program

One of the examples of adaptive learning being used in secondary school education is the Summit Learning Program (Jones, 2018). This program is designed to personalize learning for each student and provide them with the skills and knowledge needed to succeed in college and career. The Summit Learning Program uses an online platform that adapts to each student's needs and learning style. The platform provides a personalized learning experience with interactive activities, projects, and assessments (Jones, 2018). Students can work at their own pace and receive personalized feedback from their teachers. The program also emphasizes student ownership of the learning process. Students set goals, track their progress, and reflect on their learning. Teachers act as facilitators and coaches, providing guidance and support as needed. The Summit Learning Program has been implemented in many secondary schools across the United States and has received positive feedback from both students and teachers. It has been credited with improving student engagement, motivation, and learning outcomes.

Smart Sparrow Platform

The example of adaptive learning being used in higher education is the Smart Sparrow platform, which is used by a few universities around the world (Pfeiffer & Jabbar, 2019). Smart Sparrow is an adaptive learning platform that allows educators to create and deliver personalized learning experiences. It uses advanced algorithms to analyze student data and adapt the learning experience to the individual needs and abilities of each student. Educators can use Smart Sparrow to create interactive and engaging online content that adapts to each

student's progress, providing real-time feedback and guidance (Pfeiffer & Jabbar, 2019). Students can work at their own pace, and the platform provides them with immediate feedback on their progress, strengths, and areas for improvement. Smart Sparrow has been used in a variety of higher education contexts, from introductory science courses to nursing education. It has been shown to improve student learning outcomes, engagement, and retention. The platform also allows educators to monitor student progress and identify areas where additional support may be needed.

Axonify Learning Platform

One example of adaptive learning being used in corporate training is Axonify, a cloud-based adaptive learning platform designed for employee training and development (Kapp, Valtchanov, Pastore, & Development, 2020). Axonify uses artificial intelligence and machine learning algorithms to provide personalized training experiences for each employee. It delivers short, bite-sized training modules that adapt to each employee's individual needs, preferences, and learning style. The platform also uses gamification to engage employees and motivate them to continue learning. Employees can earn points and badges for completing training modules, and the system provides immediate feedback on their progress and performance (Kapp et al., 2020). Axonify has been used by a variety of companies, from large corporations to small businesses, to train employees in a wide range of topics, such as compliance, sales, customer service, and leadership. It has been shown to improve employee engagement, performance, and retention, and to reduce training time and costs for organizations.

The Future of Adaptive learning

Adaptive learning has the potential to transform higher education by providing a more personalized, engaging, and effective learning experience for students. The future of adaptive learning in higher education is likely to see further developments by advancing in AI and machine learning will enable adaptive learning systems to become more sophisticated and effective, by providing better ways to analyse student data and make decisions about the learning experience (Mavroudi, Giannakos, & Krogstie, 2018).

Integration with other technologies. Adaptive learning systems are likely to be integrated with other technologies, such as virtual and augmented reality,

gamification, and social learning, to create more immersive and engaging learning experiences.

Increased use of data and analytics. The use of data and analytics will continue to increase in adaptive learning systems, allowing for better understanding of student behaviour, preferences and performance, and making the learning experience more effective.

Greater personalization. Adaptive learning systems will continue to become more personalized, adapting to the individual needs and preferences of each student.

Wider adoption. Adaptive learning is likely to become more widely adopted in higher education, as institutions recognize the benefits and become more comfortable with the technology.

Collaborative learning. Adaptive learning systems will also be designed to foster more collaboration among students, and to support peer-to-peer learning.

Overall, the future of adaptive learning in higher education is very promising, as it has the potential to improve student engagement, motivation, and success by providing personalized learning experience (Mavroudi et al., 2018).

Emerging Technologies in Adaptive Learning

There are several emerging technologies that have the potential to be used in adaptive learning. Artificial Intelligence (AI) can analyze large amounts of data to personalize the learning experience for each student and automate tasks such as grading and feedback (Anderson, Foundations, & applications, 2016). Virtual and Augmented Reality (VR/AR) technologies can create immersive learning experiences that simulate real-world scenarios, making it particularly useful in fields where hands-on experience is important. Natural Language Processing (NLP) technologies can analyze and understand natural language, providing more personalized interactions between students and learning platforms, including chatbots and voice assistants. Learning analytics can track and analyze student data to identify patterns and trends in their learning behaviors, which can help educators personalize the learning experience and identify areas where additional support may be needed. Finally, Blockchain technology can create secure and transparent digital credentials and certificates that can be shared and verified across different platforms and institutions, making it easier for students to demonstrate their skills and knowledge to potential employers or other

educational institutions. As these and other emerging technologies continue to evolve, they have the potential to revolutionize the way we approach adaptive learning, providing more personalized and effective learning experiences for students.

The Impact of Artificial Intelligence on Adaptive Learning

There have been significant advancements in machine learning and deep learning, these approaches still lack the ability to reason, make decisions, and learn in a way that resembles human intelligence (Jordan, 2019). Adaptive learning without full potential of AI can still provide some degree of personalization based on data and analytics but its scope maybe limited and processing data at a larger scale can pose a major challenge. However, full scale of AI can add a significant impact on adaptive learning by providing personalized learning experiences, improving student engagement and motivation, reducing the burden on teachers, and improving assessment and grading (Almohammadi, Hagra, Alghazzawi, & Aldabbagh, 2017). As AI technology continues to evolve, its impact on adaptive learning is expected to become even more profound (Lodge et al., 2020). AI algorithms analyze vast amounts of data to identify patterns in a student's learning behavior and personalize the content and difficulty level of the learning materials to match their individual needs. This personalized approach can increase engagement and motivation, leading to better learning outcomes. AI-powered virtual tutors and chatbots can also provide instant feedback and support to students, answering their questions and helping them overcome difficulties. This reduces the burden on teachers and allows them to focus on other aspects of the learning experience (Peredo et al., 2011). Another way that AI is impacting adaptive learning is using predictive analytics. AI algorithms can analyze student data to predict their future performance, identify areas of weakness, and provide personalized recommendations for improvement. This can help students stay on track and achieve their goals. AI is also being used in grading and assessment. Automated grading using AI algorithms can provide more immediate and accurate feedback to students, allowing them to identify areas of improvement more quickly (Butow & Hoque, 2020; Fu, Gu, & Yang, 2020). This can also save teachers time and increase the efficiency of the grading process.

The Potential of Adaptive Learning for Lifelong Learning

Adaptive learning has the potential to revolutionize lifelong learning by providing

personalized, engaging, and effective learning experiences to learners of all ages and backgrounds. As technology continues to evolve, the potential for adaptive learning to support lifelong learning is expected to become even greater (Kleisch, Sloan, Melvin, & Practice, 2017). Adaptive learning can provide personalized learning experiences to learners of all ages and backgrounds, regardless of their prior knowledge or experience. It can assess their current knowledge and learning style and tailor the content and difficulty level of the learning materials to their individual needs. This can help learners stay engaged and motivated and improve their learning outcomes.

In the context of lifelong learning, adaptive learning can also help learners to identify their areas of strengths and weaknesses and provide targeted recommendations for further learning. It can also help learners to build on their existing skills and knowledge and acquire new ones more efficiently. Adaptive learning can be particularly useful for adult learners who may have different learning needs and preferences than traditional students. It can provide flexible and convenient learning options that fit around their work and personal commitments. This can help adult learners to balance their learning with other aspects of their lives and achieve their learning goals.

The Ethical and Social Implications of Adaptive Learning

Adaptive learning technologies hold great promise for improving education and learning outcomes, but they also raise ethical and social implications that need to be carefully considered (Trites, 2019). Figure 3 highlights some of the key ethical and social implications of adaptive learning (Chen, Zou, Xie, & Wang, 2021; Trites, 2019):

<p>Privacy and data protection</p>	<ul style="list-style-type: none"> • Collection of individual data raises concerns about privacy and data protection. • Learners' data must be secure and respects their privacy rights.
<p>Bias and discrimination</p>	<ul style="list-style-type: none"> • Adaptive learning algorithms may unintentionally perpetuate bias and discrimination • It is important to ensure that the algorithms are designed and trained in a way that is fair and unbiased
<p>Equity and access</p>	<ul style="list-style-type: none"> • Adaptive learning technologies may exacerbate existing inequities in education and access to learning opportunities. • It is important to ensure that adaptive learning is accessible to all learners.
<p>Control</p>	<ul style="list-style-type: none"> • It is important to ensure that learners have the ability to make informed choices about their learning and to control the pace and direction of their learning.
<p>Responsibility and accountability</p>	<ul style="list-style-type: none"> • It is important to ensure that educators, institutions, and technology providers all share responsibility for the quality and effectiveness of the learning experience.
<p>Transparency and explain ability</p>	<ul style="list-style-type: none"> • It is important to ensure that learners and educators have access to information about how the algorithms work and how decisions are made

Figure 3: Some of the key ethical and social implications of adaptive learning

Although, adaptive learning has the potential to improve education and learning outcomes, but it is important to address these ethical and social implications to ensure that the benefits are realized in a way that is fair, equitable, and transparent.

Challenges of Adaptive Learning

Adaptive learning is a process of adjusting the learning experience to the individual needs and preferences of the learner, and it can bring many benefits (Mavroudi et al., 2018). However, there are several challenges that need to be considered when implementing adaptive learning. Some of the main challenges include (Mavroudi et al., 2018; Zliobaite et al., 2012):

Data collection and analysis. Adaptive learning requires a significant amount of data about the learner's performance and preferences. Collecting this data and analysing it to make decisions about the learning experience can be time-consuming and resource intensive.

Personalization. Adaptive learning requires a high degree of personalization, which

can be challenging to achieve. It requires the system to have a detailed understanding of the learner's needs and preferences, and to be able to adapt the learning experience accordingly.

Scalability. Adaptive learning systems can be complex and require a lot of resources. Scaling up the system to accommodate many learners can be a challenge.

Evaluation and assessment. Adaptive learning systems are highly personalized, so it can be difficult to evaluate and assess their effectiveness. It may be challenging to compare the performance of different learners, and to determine the impact of the adaptive learning on their overall performance.

Privacy and security. Adaptive learning systems typically collect and store a lot of personal data about the learner, which can raise concerns about privacy and security. It is important to ensure that the data is collected, stored, and used in a way that complies with relevant laws and regulations and protects the learners' privacy.

Technical challenges. Adaptive learning systems are often built on complex and evolving technologies, which can be hard to implement and maintain. It also requires a good understanding of the learning process and the underlying learning theories.

Acceptance of this change and transformation to new methods of assessing ones learning needs demand a huge change in the attitude and society at large.

Risk factors

Adaptive learning is a popular educational approach that utilizes technology to personalize learning experiences for individual learners. It has been touted as an effective way to improve student outcomes, increase engagement, and reduce dropout rates. However, there are several risk factors that need to be considered when implementing adaptive learning. Firstly, technical issues such as software glitches, slow internet connections, and hardware malfunctions can disrupt the learning process. This can lead to frustration and disengagement from learners, reducing the effectiveness of the adaptive learning system. Moreover, the algorithms used in adaptive learning systems may be biased, resulting in unequal treatment of different learners based on factors such as race, gender, and socioeconomic status. This issue is particularly concerning given the potential impact of technology on educational equity. It is essential to ensure that algorithms are designed and tested to avoid unintended bias and that the data collected is representative of the diverse range of learners who will be using the

system (Archambault, Barnett, & Education, 2010).

One of another concerns is the lack of human interaction in adaptive learning. While technology can personalize learning experiences, it cannot replicate the social and emotional connections that come from human interaction. Some studies have suggested that a lack of human interaction can lead to reduced motivation and feelings of isolation among learners (Muñoz et al., 2022). Furthermore, over-reliance on technology can lead to a lack of critical thinking and problem-solving skills, as learners may become too dependent on the software to guide their learning. It is essential to ensure that learners have opportunities to develop their critical thinking and problem-solving skills alongside adaptive learning.

Technology availability at all levels

Technology availability is a basic building block of adaptive learning which requires the access and use of technology to personalize the learning experience for individual learners. However, the level of technology availability required for adaptive learning can vary depending on the specific approach being used. The least requires access to a device with internet connectivity, such as a laptop, tablet, or smartphone. Learners must also have access to the software or platform being used for adaptive learning, which may include educational software, learning management systems, or adaptive courseware. However, in some cases the specific approach being used needed some advanced technologies such as high-speed internet connections, advanced hardware, or specialized software but it is depending on in-situ (UNESCO, 2017). Adaptive learning becomes a key challenge when it comes to digital divide, which refers to disparities in access to technology and digital resources. Learners from low-income families, rural areas, or developing countries may not have the same level of access to technology as their peers, which can create barriers to using adaptive learning systems. Developers must consider the solutions that work on low-cost devices and low-bandwidth internet connections. For example, some providers are using mobile devices to deliver adaptive learning content, as mobile phones are more widely available than computers in many developing countries (UNESCO, 2017).

The Pitfalls of Over reliance on Immature Technology

Technology malfunctioning is a risk factor associated with the implementation of adaptive

learning, as it is mainly based on technology to deliver personalized learning experiences to individual learners (Bienkowski et al., 2012). Malfunctioning can take various forms, such as software glitches, hardware failures, or internet connectivity issues, and can disrupt the learning process, leading to frustration and disengagement from learners. It is important to ensure that the technology infrastructure supporting the adaptive learning system is robust and reliable (Bienkowski et al., 2012). This can involve investing in high-quality hardware and software, ensuring that internet connectivity is fast and stable, and implementing security measures to protect against data breaches. There must be an existing technical support for trouble shooting for users to address any technology issues that may arise. This technical support involves providing online or phone support, setting up a help desk, or training teachers to troubleshoot common technical problems. It is essential to ensure that learners and teachers have the necessary skills and resources to use the technology effectively and that they can quickly address any technical issues that may arise. In addition to these technical strategies, it is essential to have a backup plan in case of technology malfunctioning (Bienkowski et al., 2012). This can involve having a contingency plan for learners to continue their learning in case of a system outage or providing alternative learning resources that do not rely on technology, such as print materials or face-to-face instruction.

Maximising system performance

The readiness and training of operators, including teachers and administrators, is an essential factor in the effective implementation of adaptive learning systems. End-users play a critical role in supporting the use of these systems, and their readiness and training can significantly impact the success of adaptive learning initiatives (Pepper, Crespo, Montomoli, & Safety, 2022). To effectively use adaptive learning systems, operators must be familiar with the technology, understand the underlying learning theories and algorithms, and have the skills to interpret and act on the data generated by the system. For example, teachers must be able to interpret the data provided by the system to personalize instruction and provide targeted feedback to learners.

To address the readiness and training of operators, it is essential to provide comprehensive professional development and training opportunities. This can involve workshops, online courses, or mentoring programs that focus on the technology, pedagogy, and data analysis skills required for effective use of the adaptive learning system (Archambault et al., 2010; S.

Graf et al., 2011). Professional development opportunities should be ongoing and provide support for end-users as they gain experience with the system. It is also important to involve operators in the design and implementation of adaptive learning systems to ensure that the system meets their needs and is aligned with their goals for student learning. Engaging stakeholders in the design process can also promote buy-in and ownership of the system, which can contribute to its success.

In addition to professional development and involvement in the design process, it is essential to have adequate technical support to address any technical issues that may arise. End-users must be able to access technical support to troubleshoot technical problems and ensure that the system is functioning correctly.

Summary

This chapter delves into the concept of adaptive learning, a personalized approach to education that tailors the learning experience to individual learner's needs. This is made possible by the use of artificial intelligence, data analysis, and other technologies that adjust the content and pace of instruction to suit the learner's abilities and goals. The future of adaptive learning is bright, with emerging technologies such as machine learning, natural language processing, and augmented reality paving the way for even more personalized and immersive learning experiences. For instance, machine learning algorithms can analyze learner data and predict which topics they are most likely to struggle with, allowing for targeted interventions to prevent learning gaps. However, there are also challenges that need to be addressed in implementing adaptive learning, such as ensuring that the data used is accurate and unbiased, addressing privacy concerns, and ensuring that the algorithms used are transparent and fair.

Despite these challenges, adaptive e-learning systems offer numerous benefits, including improved learning outcomes, greater engagement, and increased personalization. This makes it a promising avenue for educational institutions and organizations, looking to improve their e-learning programs and acquire more effective educational delivery processes for the learners. Nevertheless, the current developments in different arena supporting adaptive learning with different innovations through support of Artificial Intelligence is paving a way forward for a mature, futuristic, automated, and sustainable learning environment. It is

expected that the promising and continued development through innovation will also make a place for the deprived societal groups and provide them with opportunities of learning, to equally contribute in the global development.

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Chapter 2 - Metacognitive Regulation in Collaborative Problem-Solving: A Bibliometric Analysis and Systematic Literature Review

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Chapter Highlights

- Recent studies show a consensus that metacognitive regulation is carried out in a collaborative context such as Collaborative Problem-Solving (CPS).
- Bibliometric analysis was used to find the main topics, authors, most cited articles, and co-occurrence network of keywords in the literature on metacognitive regulation.
- Articles indexed in Scopus were analyzed for the period 2011 to 2022 that had metacognitive regulation topic in social context.
- Metacognitive regulation topic had increased from 2011 to the present.
- The authors that have the most impact are De Backer, Valcke, and Van Keer.
- The Co-occurrence network emphasized that metacognitive regulation in collaborative problem-solving is a trending topic for the present research.
- There are two triggering situations of metacognitive regulation in CPS, which are internal and external aspects.
- The internal aspects consist of system of individual's conceptual, individual motivation, personal satisfaction, and self-projection.
- The external aspect consists of anomalies in task performance, task that spark different ideas, task that has uncertainty, different perspective, engage in explanation, and looking for consensus.

Introduction

Being a problem solver is a requirement of life in the 21st century. However, the obstacle to reaching these demands is the need for students' ability to monitor, assess, and modify their learning progress (Bakar & Ismail, 2020; Cahdriyana, 2021). This ability is called metacognition. Many studies have shown that good problem-solving skills are closely related to good metacognition (Du Toit & Du Toit, 2013; Güner & Erbay, 2021; Liu & Liu, 2020). So, the problem-solving process can be passed well by an individual who can realize the cognitive abilities and understanding of disorders experienced, choose the right strategy, use personal resources, and assess the results.

The learning goals will achieve if teachers design instruction that applies metacognition to student learning. So that students can know and be aware of their cognitive abilities, and then they can regulate their cognition to do their work well. Many studies have shown that students' metacognitive abilities influence student learning performance (Anggo et al., 2014; Kaluge, 2019; Rizqiani & Hayuhantika, 2020).

Metacognition was introduced by Flavell (1976). Metacognition focuses on two aspects that is metacognitive knowledge and metacognitive regulation in problem-solving (Jin & Kim, 2018). Metacognitive knowledge refers to a person's knowledge about their cognitive abilities. In comparison, metacognitive regulation describes how a person monitors and controls their cognitive processes (Brown, 1987; Jacobs & Paris, 1987; Veenman et al., 2006). Furthermore, metacognitive regulation is a sequence of actions students take to regulate their learning through three processes: planning, monitoring, and evaluation (Jacobs & Paris, 1987; Schraw, 1998).

Metacognitive regulation is the highest component of metacognition than metacognitive knowledge (Bakar & Ismail, 2019; Stephanou & Mpiontini, 2017). Awareness of cognitive abilities does not adequately explain the results of cognitive processing, so it is essential to examine strategies for monitoring and controlling cognition (Stephanou & Mpiontini, 2017). It is also related to solving mathematical problems. Students need to use their metacognitive knowledge more, but they have to regulate cognition, plan, and evaluate thinking actions towards achieving completion. Therefore, students' mathematical performance is determined by metacognitive regulation and not only metacognitive knowledge.

Metacognitive regulation in the traditional view is examined individually on task and learning outcomes. The traditional view considers only the simultaneous monitoring of individuals. Mathematics learning is not only oriented to individual learning but also the student learning process. It is obtained from social and interactive activities. Therefore, it is helpful to examine metacognitive regulation in a collaborative context. Students solve problems collaboratively with other students. In a collaborative context, individual metacognitive regulation can be triggered by a verbal statement from other group members (Lobczowski et al., 2021). In recent research, there has been a consensus that metacognitive regulation can be examined at the interpersonal level, for example, in CPS (De Backer et al., 2020; Iiskala et al., 2011, 2021; Molenaar et al., 2014). Previous research has also challenged the traditional view of metacognition, namely that metacognitive regulation is examined individually and has proven that metacognitive regulation can arise in group learning activities and can work well at the individual and social levels (Jin & Kim, 2018). Thus, it is necessary to identify what situations can trigger the emergence of metacognitive regulation in collaborative problem-solving. In addition, it is also necessary to determine specific indicators of metacognitive regulation in the context of CPS to be used in research.

The number of academic publications is increasing at a rapid pace, especially on metacognitive regulation topics. Therefore, literature reviews are increasingly assuming a crucial role in synthesizing past research findings to effectively use the existing knowledge base, advance a line of research and provide evidence-based insight into the practice of exercising and sustaining professional judgment (Aria & Cuccurullo, 2017). In the literature review, different qualitative and quantitative approaches are used to understand and organize earlier finding (Aria & Cuccurullo, 2017). Thus, this study uses two methods in reviewing literature that is bibliometrics analysis for the quantitative method and inductive analysis for the qualitative method.

The aim of this study is to identify and analyze the scientific literature with a bibliometric review to find the main topics, authors, most cited articles, and co-occurrence network, as well as to identify the triggered situation for metacognitive regulation in CPS and to determine the indicator of metacognitive regulation in CPS. The articles in the scientific production indexed in Scopus were consulted to reach the objectives research, analyzing the articles and the emerging trend research in articles published between January 2011 and

August 2022. This study analyzes relevant data from previous research to answer the following research questions in Table 1.

Table 1. Research Questions

Research Questions	Objectives	Motivation
1 Which authors and journals lead the literature on metacognitive regulation, and which articles are cited the most?	To identify the most prolific sources and authors.	To contribute to a better understanding of scientific leadership in metacognitive regulation
2 What are the main topics that are researched, and which words are most used in the literature on metacognitive regulation?	To show which topics are of most concern to researchers	To find out what topics scientific research is focusing on
3 What situations can trigger the emergence of metacognitive regulation in CPS?	To identify the situation which can trigger metacognitive regulation in CPS	To facilitate researcher who wants to study metacognitive regulation in CPS
4 What are the indicators of metacognitive regulation that occur in students when solving problems collaboratively?	To determine the indicator of metacognitive regulation in CPS	To produce an indicator of metacognitive regulation in CPS that can be used in research

Method

This study uses a bibliometric analysis which is an approach that uses a set of quantitative methods to measure, track, and analyze scholarly literature and can be applied in all studies that aim to quantify the process of written communication to answer the first two research questions in Table 1 (Gokhale et al., 2020). We used the Scopus database as a search engine compatible with biblioshiny software used for data analysis. The application provides a web interface for Bibliometrix software and provides the data in graphical format (Aria & Cuccurullo, 2017). Data was gathered from journal articles indexed in Scopus. Articles that

constitute a representative sample of international scientific activity published in scientific journals were analyzed (Durán-Sánchez et al., 2018; Rojas-Sánchez et al., 2022). Therefore, meeting papers, books, chapters, proceedings, editorials, news, and other types of documents found in the database were excluded.

The obtained document from a search in the Scopus database uses the search string TITLE-ABS-KEY ("Metacognitive Regulation") AND PUBYEAR > 2010. The limitation is used to focus on articles that study metacognitive regulation in social contexts or collaborative problem-solving. The limitation is also used to search articles that has synonym or related word. At this step, 87 articles were obtained from the Scopus database. Table 2 represents the limitation used in the Scopus database.

Table 2. Limitation in the search string

Aspect of Limitation	Description
Document Type	Article
Subject area	Social science, psychology, arts and humanities, mathematics
Exact keyword	metacognition, metacognitive regulation, problem-solving, metacognitive knowledge, metacognitive awareness, collaborative learning, self-regulated learning, socially shared metacognitive regulation, metacognitive skills, cooperative learning, mathematical learning, mathematical problem solving, metacognitive strategies, shared regulation, collaboration script, metacognitive, metacognitive monitoring, problem-solving process, self-regulation, shared metacognitive regulation
Language	English
Source type	Journal

The second analysis is used to answer the last two questions on the research question in Table 1. This study used Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA). PRISMA minimizes various biases and helps in synthesizing studies effectively by requiring a systematic search strategy that consists of four distinct processes, namely identification, screening, eligibility, and evaluation of article quality (Hamzah et al., 2022).

Although PRISMA is widely used in the field of science as an example of medicine and public health, nowadays, it is also still appropriate in social studies.

Identification

Identification is the process of determining and distinguishing keywords that are suitable for article searches. Same with the obtained document in bibliometric analysis, this systematic literature review also uses the search string TITLE-ABS-KEY ("Metacognitive Regulation") AND PUBYEAR > 2010 in Scopus Database. Thus, the keyword used in this study is "Metacognitive Regulation". The Scopus database was chosen because Scopus-indexed journals go through a rigorous evaluation process with long and detailed stages to produce good-quality articles.

Table 3. Inclusion Criteria

Topics	Inclusion Criteria
Year of publication	2011-2022
Document Type	Article
Source type	Journal
Language	English
Subject Area	See Table 2
Exact Keyword	See Table 2
Abstract	Explain the topic of metacognition, especially metacognitive regulation in collaborative or social contexts such as CPS
Finding focus	There is an explanation of situations that can trigger metacognition, more specifically, metacognitive regulation in social context or CPS.

Screening

Screening is the process by which inclusion or exclusion criteria are established to select relevant articles to form a systematic literature review. From a total of 180 articles that were identified based on keywords, the first screening process was carried out, that is, the publication of articles in the 2011 to 2022 period. This period was chosen based on the reason

that the research conducted was still relevant to current conditions. Furthermore, screening is done based on document type, source type, language, subject area, and exact keyword. The last two inclusion criteria are abstract and finding the focus to determine the article which will be reviewed. The inclusion criteria are shown in Table 3.

Eligibility

The eligibility process was carried out to ensure that all selected articles were relevant and could be used in a systematic literature review. This process is done by looking at the title and abstract. If no decision is made after reading the research title and abstract, then continue reading the methodology, results, and discussion sections. In this process, a total of 57 articles were excluded because they were not following the focus to answer the research problems, that is, the identification of situations that can trigger metacognitive regulation, which was not accessible. PRISMA stages (see Figure 1) are described in the following chart.

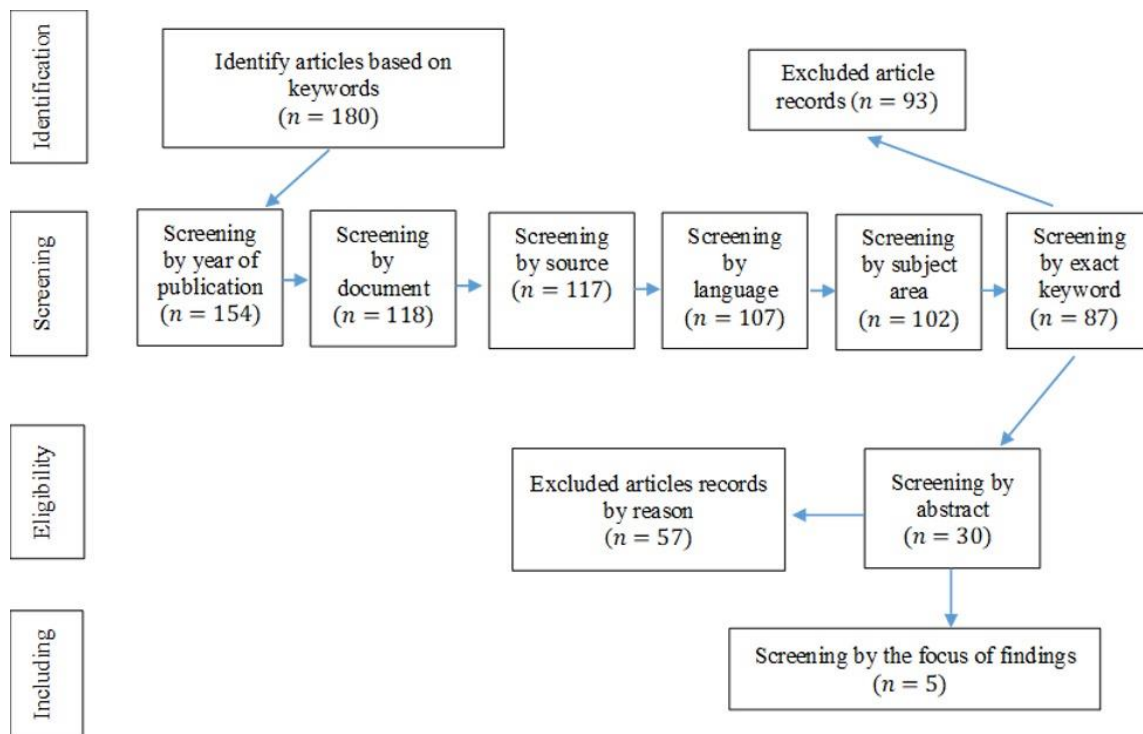


Figure 1. PRISMA Stages of the Study

Article Quality Evaluation

Selected articles are then evaluated for quality. This minimizes bias and helps identify articles that may have methodological deficiencies. The articles in this systematic literature review

combine articles and documents from two research designs, namely qualitative and quantitative. In addition, articles from the literature review are also used. Each article was evaluated against two general criteria and five specific criteria. The first step is to evaluate the quality of the article based on two general criteria, as follows: (1) Is the research question clearly stated? (2) Can the data obtain answer the research questions raised? Articles in this study are required to fulfil both aspects before proceeding to the separation stage.

During the separation stage in the quality assessment process, the research design of an article is identified to clarify whether it is qualitative, quantitative, mixed methods, or literature review. The articles and documents are then evaluated against five specific criteria. Each criterion has three possible answers: 'Yes', 'No', or 'Do not know'. Questions on five specific criteria were adapted from (Hamzah et al., 2022). The following are five specific criteria questions focused on quantitative research: (1) Is the sampling strategy used relevant to the research question? (2) Is the selected sample representative of the population being studied? (3) Are the measurements used correctly? (4) Is the risk of nonresponse bias low? (5) Was the statistical analysis used appropriately to answer the research question?

The results obtained from the evaluation of the quality of the articles, from 30 articles selected, five articles met the minimum criteria.

Results

Bibliometric Analysis on Metacognitive Regulation

Overview of the analyzed data set

For the first step, data obtained in the Scopus Database using the keyword "metacognitive regulation" and limited to "English" Language and the type of article in "Journal", we get 943 documents from 2011 to 2022. Metacognitive regulation is a topic of great academic interest. However, for analyzed data, we use limitations to document type, subject area and exact keyword that are written in Table 2; thus, we get 87 documents. The information from analyzed data is summarized in descriptive statistics presented in Table 4.

Figure 2 shows the annual scientific production per year. It shows that studies about metacognitive regulation, especially in a social context or CPS increased per year except in 2016 and 2018. Research about metacognitive regulation in social contexts increases

significantly between 2018 and 2021. For 2022, it is a reduction of metacognitive regulation research, but it is because we are still in the middle year.

Table 4. Main Information

Description	Results
MAIN INFORMATION ABOUT THE DATA	
Timespan	2011:2022
Sources (Journals, Books, etc.)	65
Documents	87
Annual Growth Rate %	15,76
Document Average Age	3,74
Average citations per doc	18,07
References	4554
DOCUMENT CONTENTS	
Keywords Plus (ID)	209
Author's Keywords (DE)	263
AUTHORS	
Authors	197
Authors of single-authored docs	7
AUTHORS COLLABORATION	
Single-authored docs	9
Co-Authors per Doc	2,9
International co-authorships %	19,54

Biblioshiny can be an appropriate tool used to present general statistics and relations or associations between the most significant scientific collaboration elements using the Three-Field Plot (Abhishek & Srivastava, 2021; Igwaran & Edoamodu, 2021). Figure 2 shows the relation between cited references, authors, and keywords. The three features were represented in the diagram by a rectangle with different colours. The height of the rectangles of the Three-Field Plot depended on the rate of summation of the relationship arising between features (cited reference, author, and keyword). The more relations the element had, the higher the rectangle represented it. Figure 3 shows the Three-Field Plot analysis of publications on metacognitive regulation centred on the relation between cited reference,

author, and keyword. The Three-Field Plot demonstrated the top author (De Backer), cited reference, and top keyword (metacognitive regulation).

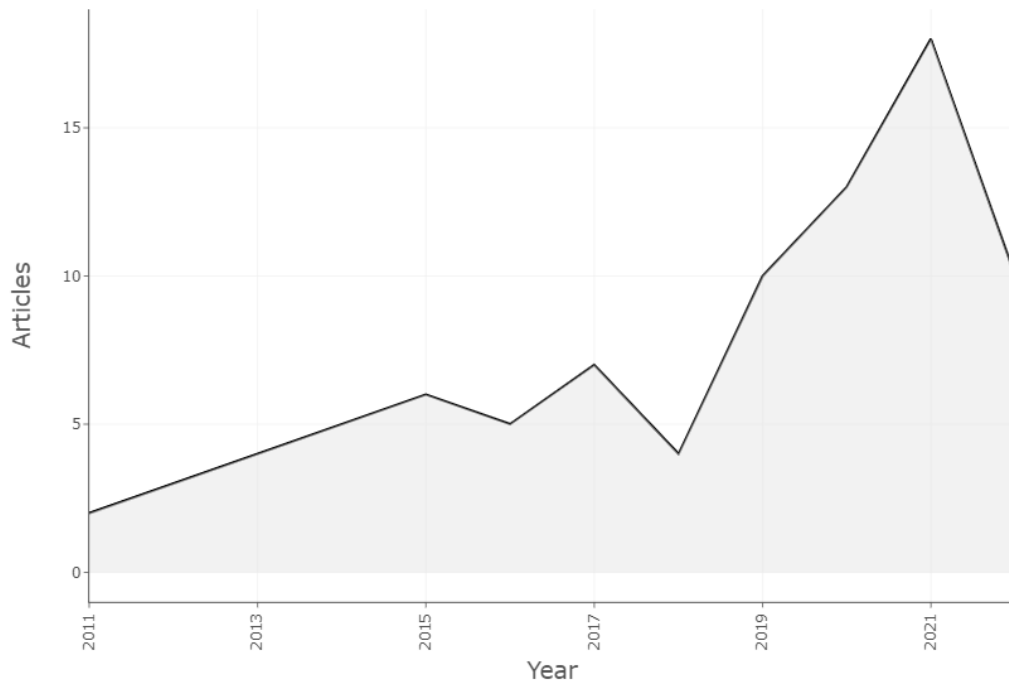


Figure 2. Annual Scientific Production

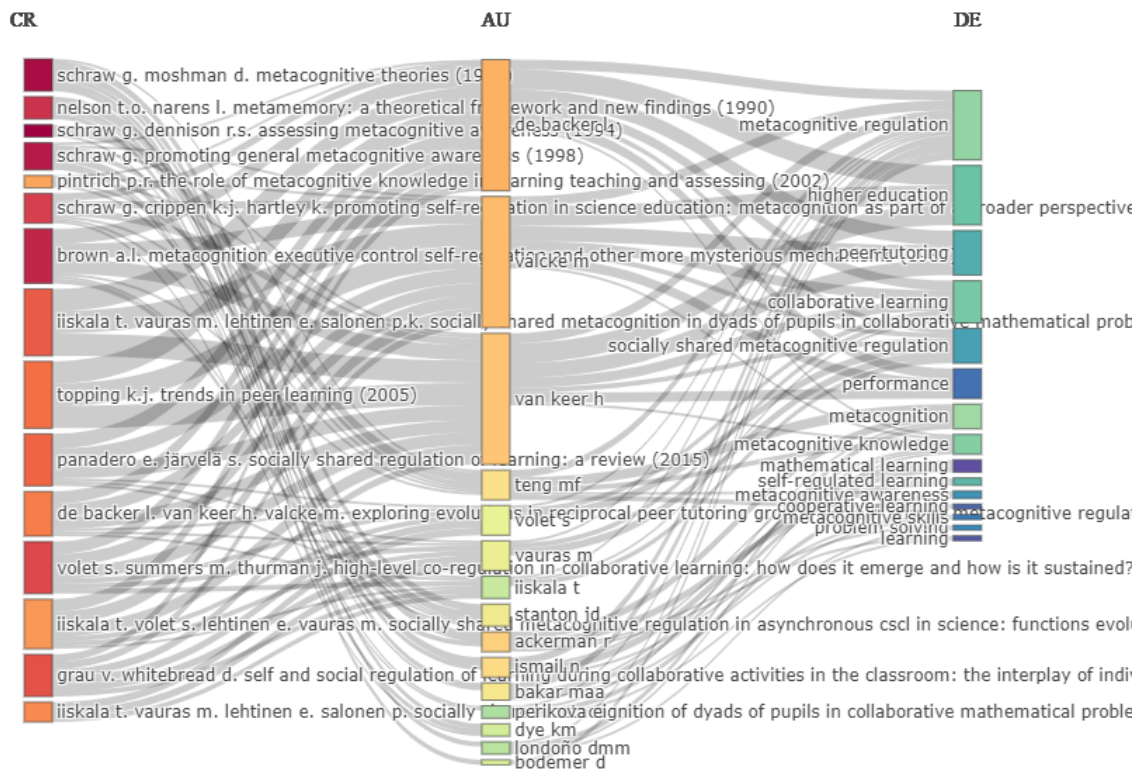


Figure 3. Three-Field Plot of Cited Reference (CR), Author (AU), and Keyword (DE)

Author with the most impact

The authors with the most impact are shown in Figure 4 and Figure 5. The top 13 authors of the publication number are shown in Figure 4. The top 15 authors of the h-index number are shown in Figure 5. De Backer L, Valcke M, and Van Keer H have the highest number of publications. Each author has 11 papers with at least six citations each. They have an h-index of 6. It means that the author has been included in at least 66 publications (Figure 5). Figure 6, which is a collaboration network, shows that De Backer L, Valcke M, and Van Keer H are co-author. A scientific collaboration network is a network where nodes are authors and links are co-authorships, as the latter is one of the most well-documented forms of scientific collaboration (Glänzel & Schubert, 2006).

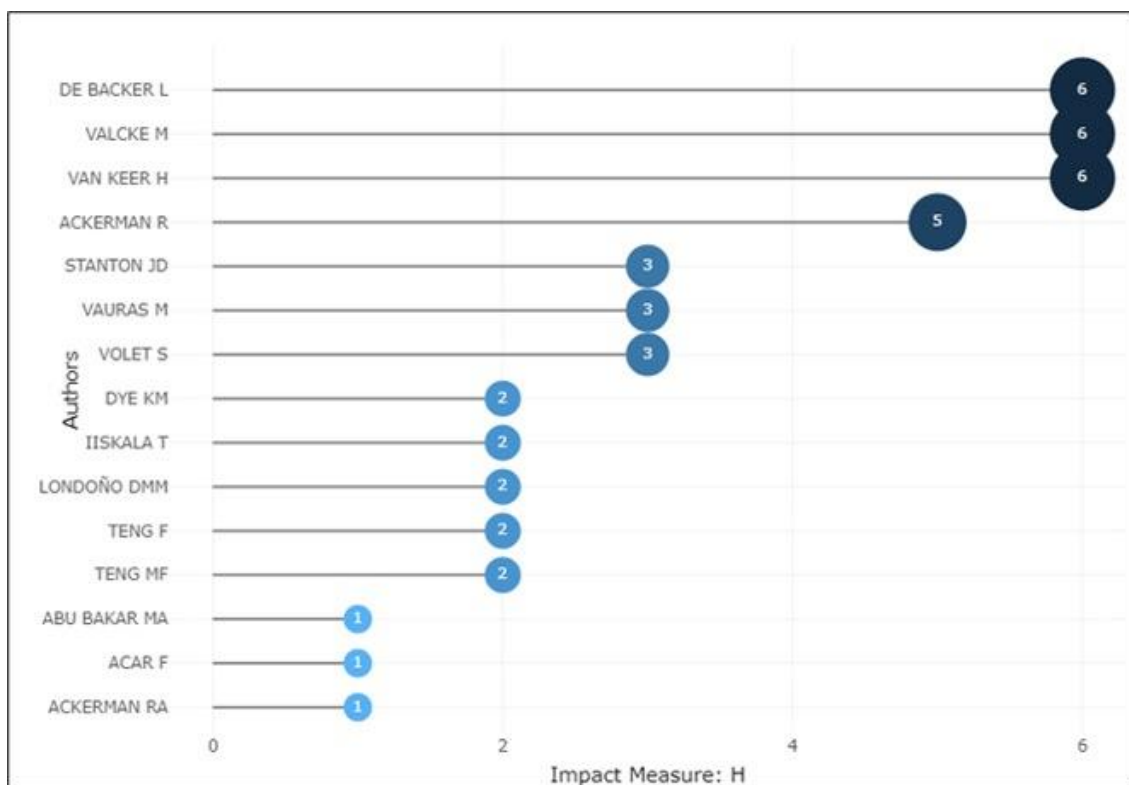


Figure 4. Most relevant author

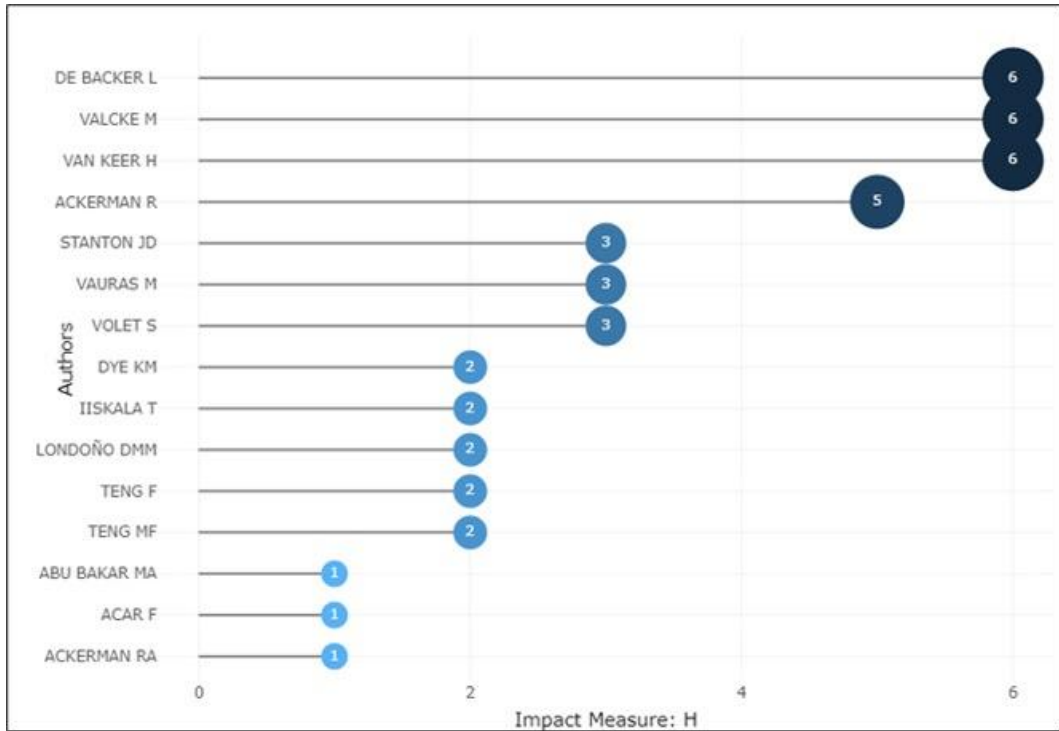


Figure 5. Author with the most impact according to h-index

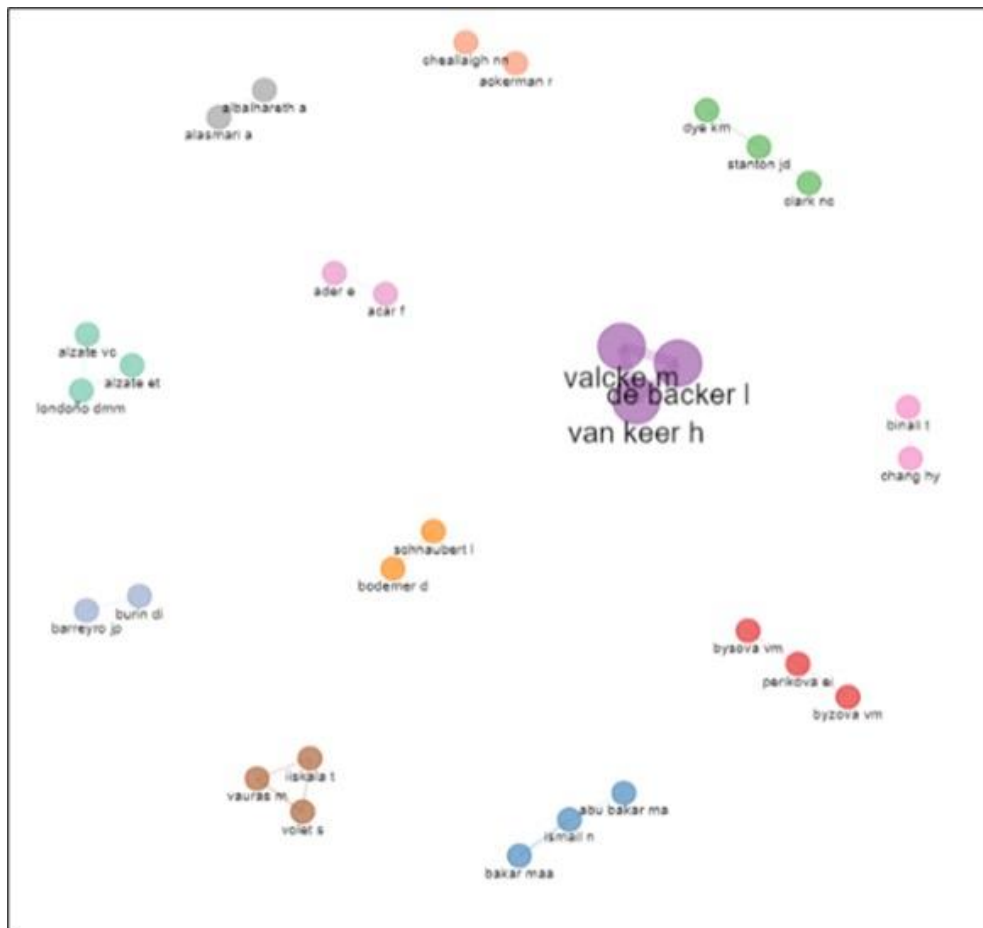


Figure 6. Collaboration Network between author

Main documents and frequently used words in the dataset

Figure 7 shows the documents with the largest number of citations. The authors whose documents with the most citation were (Ackerman & Goldsmith, 2011) and were published in Journal of Experimental Psychology: Applied with 212 citations. In the second place, (Cho & Shen, 2013), with 146 citations, were published in Distance Education. We can see that De Backer is the most impact author in the fifth place with 68 citations, and his document was published in Instructional Science Journal (de Backer et al., 2012). When a particular article is cited more frequently than another article on a similar topic, it can conclude that the article has a higher quality compared to another article (Dorta-González & Santana-Jiménez, 2019).

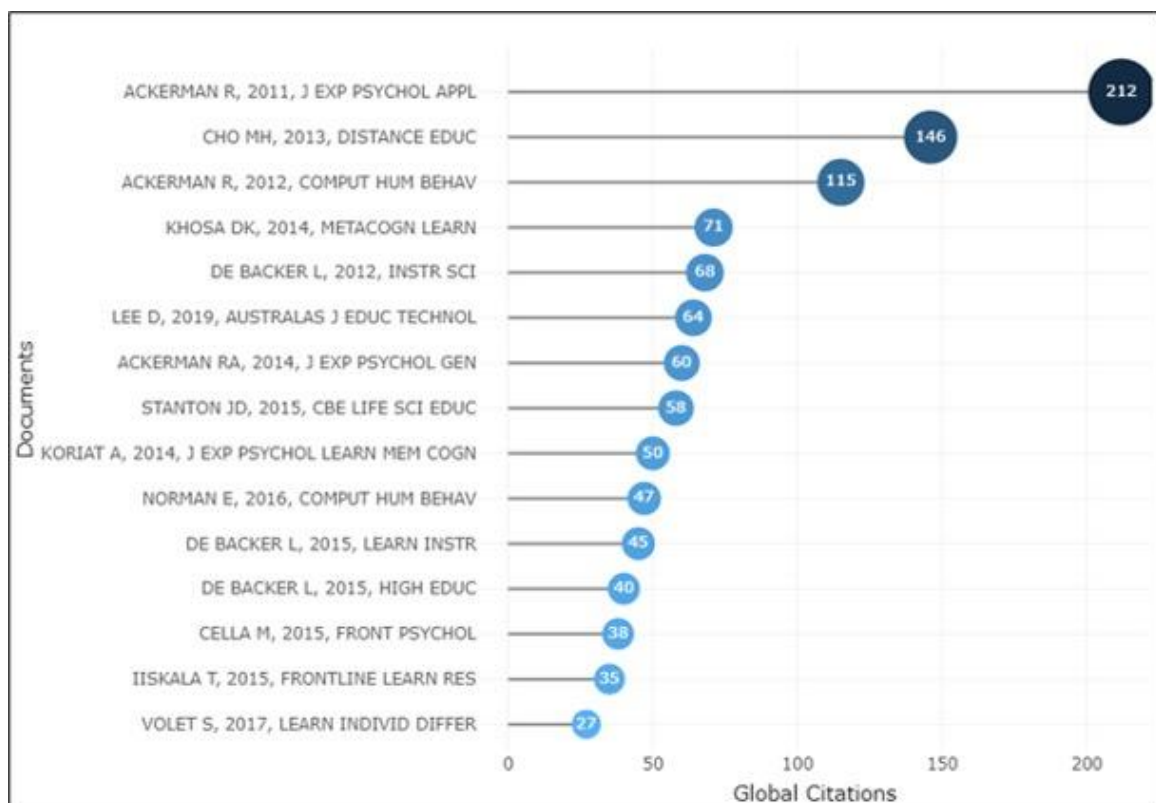


Figure 7. Most Global Cited Document

Trend topic in keywords

Metacognitive regulation has been a trending topic over the last five years. Figure 8 shows the trending topic of the author's keyword that is frequently used. The most trending topic of metacognitive regulation was in 2018, but it is still counting until the present. Another trending topic is collaborative learning and problem solving, which correspond to the problem of this study.

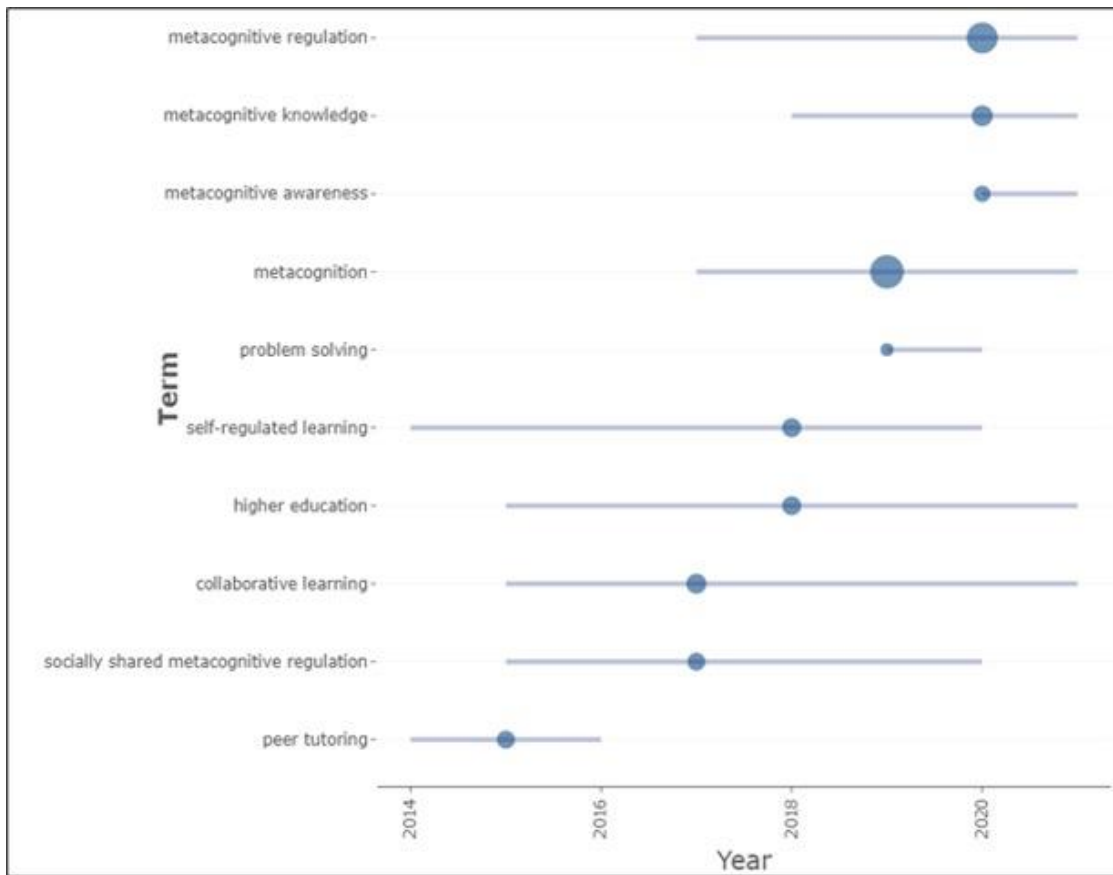


Figure 8. Trend topic of author's keywords frequently used

Co-occurrence network mapping

Like keyword co-occurrence analysis, title co-occurrence analysis is an effective tool for understanding knowledge structure and research trends (Rojas-Sánchez et al., 2022). Usually, the title contains keywords of research; thus, bibliometric mapping of the title used by the author was done to gain a thorough understanding of the conceptual structure. There are highlighting keywords that are related to metacognitive regulation that as shared metacognitive, socially shared, peer tutoring and reciprocal peer. Figure 9 shows the co-occurrence network of the title. In this figure, one should start by distinguishing nodes by their size. The size of nodes represents the number of documents, while the line between two nodes represents the co-occurrence between two keywords. From Figure 9, we see that metacognitive regulation occurs with shared metacognitive, socially shared, peer tutoring, and reciprocal peer. Moreover, collaborative learning also occurs and connects with metacognitive regulation. Shared metacognitive, socially shared, peer tutoring, and reciprocal

peer included in a collaborative context. It emphasizes that metacognitive regulation in a collaborative context is a trending topic for the present research.

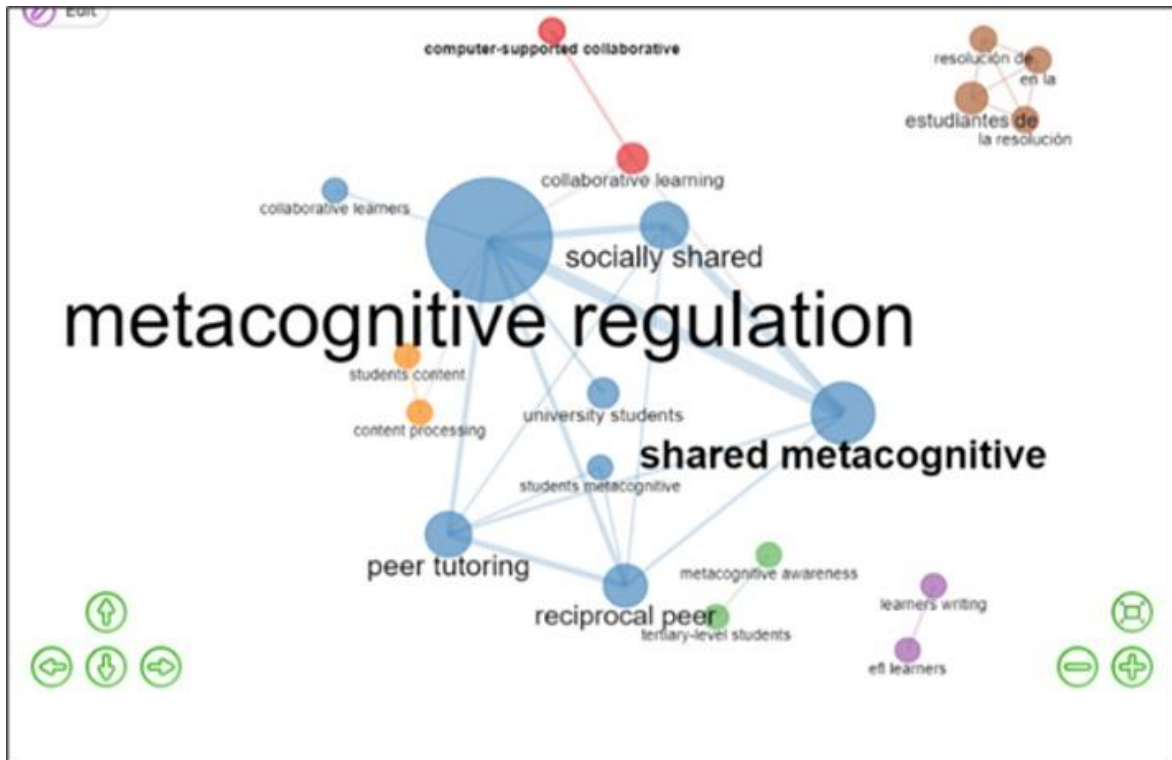


Figure 9. Co-occurrence network

Systematic Literature Review on Metacognitive Regulation in CPS

The selection of articles through the PRISMA process, where the articles were obtained from the initial search with the Scopus database, obtained five articles. The five selected articles consist of 1 article published in 2021, 2 articles in 2020, 1 article in 2018, and 1 article in 2016. Table 5 provides a summary of the findings of the ten articles selected for the systematic literature review.

Table 5. Summary of Findings on 5 Selected Articles for Literature Review

No	Article Info (Title; Author; Journal Name; Year of publication)	Research’s Aim	Results
1	Promoting	They investigated	The research hypothesis is that the

<p>metacognitive regulation through collaborative problem solving on the web: when scripting does not work;</p>	<p>metacognitive regulation when an individual works collaboratively in solving an information problem on the web in which class</p>	<p>script-supported group will produce higher joint metacognitive regulation than the control class, but the results obtained are that no significant improvement was found in the class script intervention. However, it was found that shared regulation leads to better knowledge construction.</p>	
<p>Raes, Annelies; Schellens, Tammy; Wever, Bram De; Benoit, Dries F.;</p>	<p>instruments are supported by collaboration scripts.</p>		
<p>Computers in Human Behavior, 2016</p>			
<p>2</p>	<p>Metacognitive Regulation During Elementary Students' Collaborative Group Work; Jin, Qiangna & Kim, Mijung; Interchange, 2018</p>	<p>This study reports on a study that uses metacognitive and sociocultural theoretical frameworks to discuss students' metacognitive regulation in school collaborative problem-solving.</p>	<p>This study shows that elementary school students are cognitively and metacognitively involved in problem-solving activities. These findings challenge the view that it is inappropriate to introduce younger learners, such as elementary school students, to metacognitive processes. Potential for metacognitive regulation in elementary student group work, as students actively monitor and adjust their own and peers' thinking processes and actions as they learn and work collaboratively. Several factors during student collaborative group work, such as anomalies in task performance, different</p>

			ideas emerging when solving problems, and uncertainty about these ideas, have the potential to activate students' metacognitive regulation.
3	Mathematical Instructional: A Conceptual of Redesign of Active Learning with Metacognitive Regulation Strategy; Bakar, Mohamad Ariffin Abu; Ismail, Norulhuda; International Journal of Instruction, 2020	Design and develop mathematics learning activities called MMA (Mathematical Metacognitive Activities). Evaluating the effectiveness of MMA on learning	This study resulted in an MMA learning approach that can support metacognitive regulation. MMA is a learning approach developed through the concept of active learning that focuses on improving metacognitive regulation. In addition, the collaborative context is also used in developing MMA.
4	Variations in socially shared metacognitive regulation and their relationship with university students performance; Backer, Liesje De; Keer, Hilde Van & Valcke, Martin; Metacognition and Learning, 2020	Investigate whether Socially Shared Metacognitive Regulation (SSMR) events differ from one another when comparing their characteristics. This difference is named "variation in SSMR". Studying variations in SSMR, this study aims to examine whether	Researchers identified four variations in SSMR, namely interrogative SSMR, affirmative SSMR, Interfering SSMR, and progressive SSMR. Regression analysis revealed that not all variations in the SSMR were equally crucial for predicting student performance. Students' involvement in interrogative SSMR was significantly positively related to student's performance on the knowledge test, while their involvement in Interfering SSMR was negatively related. In contrast, the frequency of student involvement in affirmative SSMR or progressive SSMR does not show a

		individual students' involvement in variations in SSMR is related to their performance.	significant relationship with student performance
5	Significance of forms and foci of metacognitive regulation in collaborative science learning of less and more successful outcome groups in diverse contexts; Iiskala, Tuike; Vollet, Simone; Jones, Cheryl; Koretsky, Milo; Vauras, Marja; Instructional Science, 2021	Explores how metacognitive regulation (MR), particularly its form and focus, is manifested in less and more successful outcome group collaborative science learning in diverse learning contexts. The MR form consists of VMSR (Verbalised Metacognitive Self-Regulation); IMR (Ignored MR); MOR (Metacognitive Other Regulation); SSMR (Socially Shared MR)	VMSR: a student only manages his thought process. Refers only to thinking about oneself, for example, understanding. IMR: one student tries to regulate the group's thought process, but another student from the group ignores the attempt. No one reacts to MR or does not affect the group process. MOR: one or more students manage the thinking processes of many students or group thinking processes. SSMR: Students are goal-directed, shared, egalitarian, and complementary regulation of the group's shared thinking process. At least two students must be involved in the rules. The findings of the study showed that the manifestations of MR in the less and more successful groups showed similarities and differences in three different learning contexts.

Situations Triggering Metacognitive Regulation in CPS

Metacognitive regulation, which is part of metacognition, according to the current study, will be beneficial if it can be explored in a collaborative context. Moreover, metacognitive

regulation is indispensable in learning. In this case, students' metacognitive regulation was examined when they solved problems collaboratively, called collaborative problem-solving (CPS). Therefore, it is essential to know what kind of situations can trigger metacognitive regulation for learning. The first finding suggests that anomalies in task performance and different ideas emerge when solving problems, and uncertainty about ideas can activate metacognitive regulation when students solve problems collaboratively (Jin & Kim, 2018). In addition, other studies have also shown that active learning can trigger metacognitive regulation in collaborative contexts (Bakar & Ismail, 2019, 2020). The form of interaction that occurs when students work with their groups in solving problems can affect the form of metacognitive regulation (De Backer et al., 2020; Iiskala et al., 2021). A significant relationship was found between students' participation in intra-group social interactions and students' metacognitive regulation (Molenaar et al., 2014).

The following finding is that there are three characterizations of problem-solving situations that can activate metacognitive regulation. In socially based contexts, situations that can trigger metacognitive regulation are characterized as situations in which students interpret diverse perspectives, engage in explanations, and seek mathematical consensus. Whereas in the individual context, situations that can trigger metacognitive regulation are characterized as situations in which students seek personal satisfaction, make experience-based quantitative judgments, and make personal projections (Magiera & Zawojewski, 2011). Although problem-solving is done collaboratively, individual thinking still has a role in the group problem-solving process. Therefore, the situation in solving individual-based problems will also affect situations that can trigger metacognitive regulation in collaborative problem-solving.

The research result was strengthened by Kim, et al. (2013), that explained that two aspects could trigger metacognition, namely internal and external aspects. The internal source is the individual's conceptual system, both cognitive and metacognitive. Individual conceptual systems are based on prior knowledge and experience. Therefore, at the individual level, students need more support in their ability to self-monitor and self-evaluate their problem-solving. Students can transcend their limitations by working together in a social environment so that they have the potential to overcome individual limitations through feedback and criticism from others. The nature of the problem, namely Model-Eliciting Activities, also

functions as a metacognitive catalyst that requires students to construct definitions and operationalize these definitions (Kim et al., 2013).

It can be identified various situations that can lead to metacognitive regulation in CPS (see Figure 10). Broadly speaking, the situation can be viewed in two aspects, namely, the individual's internal aspects and the individual's external aspects. The situation contained in the individual's internal aspects includes prior knowledge and experience possessed by the individual, and individual motivation, for example seeking personal satisfaction and making self-projections. Furthermore, in the external aspect, situations that trigger include the selection of tasks or problems given, such as anomalies in task performance, tasks that trigger different ideas, and uncertainty about ideas. Besides that, interaction in solving problems is also an external situation that triggers metacognitive regulation, namely interpreting diverse perspectives, engaging in explanations, and seeking consensus on problem-solving. The triggering situation for metacognitive regulation is described in the following theoretical framework.

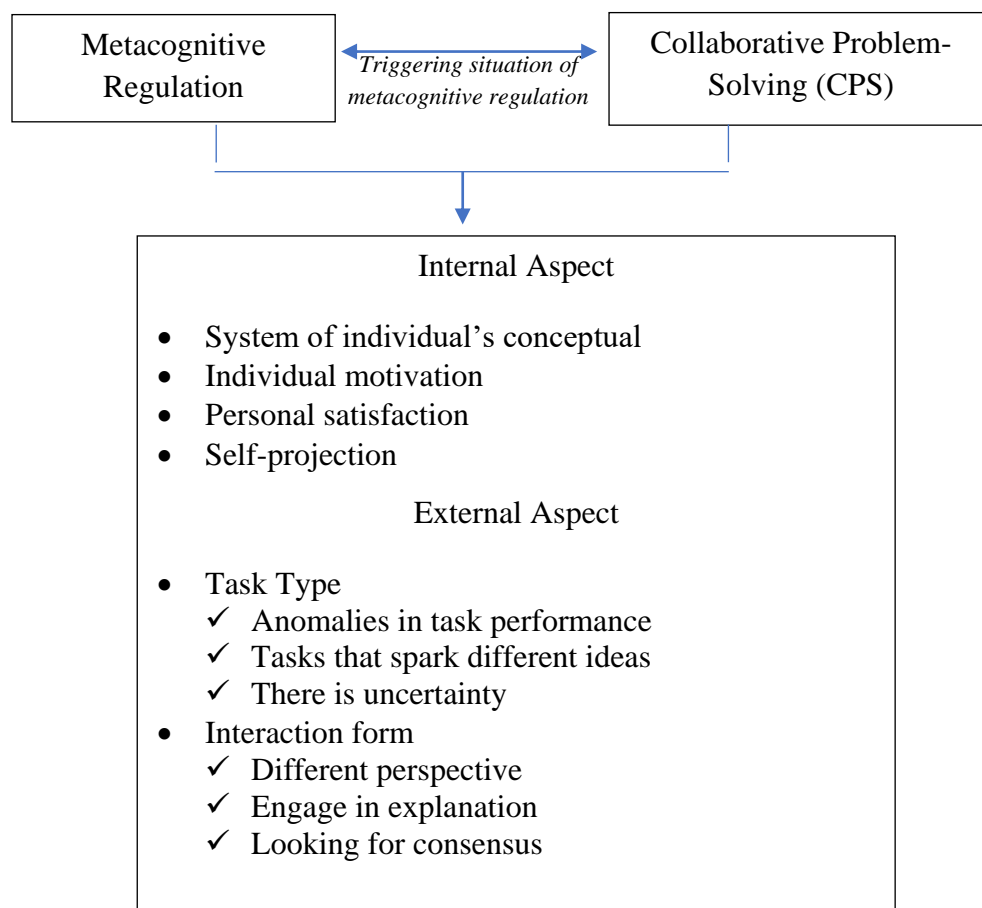


Figure 10. Situation Triggering Metacognitive Regulation in CPS

Metacognitive Regulation Indicators in CPS

Metacognitive regulation in a social context is investigated when individuals construct knowledge or solve problems in a collaborative setting with other individuals. Collaborative problem-solving has the characteristics of interaction between individuals (Molenaar et al., 2014). With the interaction between individuals, one's cognition settings can be influenced by other people. By deriving the indicators of metacognitive regulation in the context of the individual and following the theory of interactions that occur in CPS, the indicators of metacognitive regulation in CPS will be obtained.

Metacognitive regulation indicators in individual contexts or the traditional view are divided into three aspects that are planning, monitoring, and controlling (Jacobs & Paris, 1987; Schraw, 1998). Planning refers to the selection of appropriate strategies and the use of self-resources that affect performance. Monitoring refers to awareness of understanding, awareness of cognitive performance, and awareness of disturbances in understanding. Evaluation refers to assessing learning outcomes and the efficiency of learning outcomes. However, Nelson (1990) and Jin & Kim (2018) divide two aspects of metacognitive regulation, namely metacognitive monitoring and metacognitive controlling. Metacognitive monitoring refers to assessing the quality of task performance, tracking thoughts and actions during the learning process, ongoing assessment of understanding, and looking for connections or cognitive conflicts while learning. Metacognitive controlling refers to the selection of strategies for solving problems and optimizing the use of cognitive resources. Based on two views of the indicators of metacognitive regulation in an individual context, awareness of understanding, cognitive performance, impaired understanding, and assessment of learning outcomes which is a description of the monitoring and evaluation aspects mentioned by Jacobs & Paris (1987) and Schraw (1998) get in the aspect of metacognitive monitoring (Jin & Kim, 2018). Furthermore, the selection of strategies and the use of self-resources are the planning actions mentioned by Jacobs & Paris (1987) and Schraw (1998) get in the aspect of metacognitive controlling (Jin & Kim, 2018). Another indicator of metacognitive regulation is divided into four aspects that are orientation, planning, monitoring, and evaluation (Brown, 1987; Veenman et al., 2006). Table 6 shows a theoretical study of metacognitive regulation indicators in an individual context from three different views of some experts.

Table 6. Theoretical Study of Metacognitive Regulation Indicator in Individual Context

Metacognitive regulation indicator (Brown, 1987; Veenman et al., 2006)	Metacognitive regulation indicator (Jacobs & Paris, 1987; Schraw, 1998)	Metacognitive regulation indicator (Jin & Kim, 2018; Nelson, 1990)
Orientation:		
Self-orientation by analyzing tasks		
Recognizing task perceptions by orienting task content that generates hypotheses about task content and activates previous knowledge		
Planning:	Planning:	Metacognitive
Selecting and sequencing strategies	Selecting the right strategy	Controlling:
Allocating self-resources	Use of self-resources that affect performance	Selecting strategies for solving problems
Formulating an action plan		Optimizing the use of cognitive resources
Monitoring:	Monitoring:	Metacognitive
Monitoring self-progress by checking the adequacy of problem-solving/task solutions	Awareness of understanding	Monitoring:
Monitoring understanding by identifying inconsistencies and modifying problem-solving if necessary	Awareness of cognitive performance	Monitor thoughts and actions during the learning process
	Awareness of disturbances in understanding	Identify cognitive connections or conflicts while studying
Evaluation:	Evaluation:	
Assessing learning outcomes	Assessing learning outcomes	Continuous assessment of understanding
Assessing the learning process	The efficiency of learning outcomes	Assessing the quality of task performance

Based on the study of metacognitive regulation indicators in the context of individuals from several experts above, the indicators of metacognitive regulation in the context of individuals

can be identified in Table 7. This study proposed its own metacognitive regulation theory focused on CPS. To obtain metacognitive regulation indicators in CPS, indicators of metacognitive regulation in individual contexts are derived, and metacognitive regulation indicators in CPS also consider the interactions that occur in group collaboration (De Backer et al., 2014; Molenaar et al., 2014). Table 8 shows the indicator of metacognitive regulation in CPS.

Table 7. Metacognitive Regulation Indicator in Individual Context

Metacognitive Regulation Indicator in Individual Context
Metacognitive Orientation:
Self-orientation by analyzing tasks
Recognizing task perceptions by orienting task content that generates hypotheses about task content and activates previous knowledge
Metacognitive Controlling:
Selecting the right strategy for completing the task
Optimizing personal resources in completing tasks
Formulating an action plan
Metacognitive Monitoring:
Recognizing cognitive understanding and performance
Monitoring thoughts and actions during the learning process
Identifying cognitive conflicts and inconsistencies and modifying task completion if necessary
Assessing the quality of task completion performance
Assessing learning outcomes

Table 8. Metacognitive Regulation Indicator in CPS

Metacognitive Regulation Indicator in CPS
Metacognitive Orientation:
Self-orientation by analyzing tasks aimed at preparing the process of solving problems in groups
Recognizing shared perceptions of the problem to be solved by generating hypotheses about task content and activating previous knowledge
Metacognitive Controlling:

Selecting the right strategy from the results of collaborative thinking before and during the problem-solving process

Optimizing self and or group resources in solving problems

Formulating action plans resulting from collaborative activities

Metacognitive Monitoring:

Be aware of self or each other's understanding and cognitive performance

Monitoring self- or collaborative thinking and actions (participation, interaction, and group cohesion)

Identifying self or others' cognitive conflicts and inconsistencies and modifying problem-solving if necessary

Assessing the quality of self-performance or collaborative performance in problem-solving

Assessing self or group learning outcomes

Discussion

The bibliometric analysis result showed that the study of metacognitive regulation has increased since 2011. It was presented in the annual scientific production graphic in Figure 1. From the graphic, we can see that a significant increase in document production is between 2018 and 2021. Higher production is expected for metacognitive regulation studies in 2022. This result is consistent with (Eggers et al., 2021), which showed that most studies focused on metacognitive strategies followed by cognitive strategies.

The author with the most impact is (de Backer et al., 2012), with the highest cited document of 68 citations (see Figure 3 and Figure 6). In this study, we found the co-author to be Valcke and Van Keer, both with an h-index value of 6. Figure 3 shows the three most relevant authors who are considered very productive because they have 11 publications. Of the 11 articles, there are six articles that discuss shared metacognitive regulation. Shared metacognitive regulation takes place in a social context. Its occurrence cannot be isolated from interaction in group collaboration (De Backer et al., 2022; Iiskala et al., 2011). Thus, in this study, to determine the indicator of metacognitive regulation in CPS, we derived from the indicator of metacognitive regulation in individual context and interaction theory.

From the Three-Field Plot, we can see the relation of a cited reference, author, and keyword of study (see Figure 2). We use the relation of a cited reference, author, and keyword to break down a theory, especially about metacognitive regulation. The result of the systematic literature review when obtaining the indicator of metacognitive regulation in an individual context (see Table 7) is derived from the theory of cited reference. We can see in Figure 2 (Brown, 1987; Nelson, 1990; Schraw, 1998) the author who is publications are cited to produce the theory of metacognitive regulation. Thus, in this systematic literature review, we study the metacognitive regulation from the three different theories (see Table 7). The indicator of metacognitive regulation that is proposed by (Brown, 1987) and is continued by (Veenman et al., 2006) is divided into four aspects that are orientation, planning, monitoring, and evaluation. Then, the indicator that is proposed by (Jacobs & Paris, 1987; Schraw, 1998) is divided into three aspects that are planning, monitoring, and evaluation. The third theory of metacognitive regulation indicator was proposed by (Nelson, 1990) and is continued by (Jin & Kim, 2018) that divided into two aspects, namely metacognitive controlling and metacognitive monitoring. From the review of the three different theories of metacognitive regulation indicator, this study proposed the indicator of metacognitive regulation in an individual context that is presented in Table 7. Then, as we said before, indicators of metacognitive regulation in CPS are derived from the proposed theory of metacognitive regulation in individual contexts and considered the interaction that occurred in group collaboration as in Table 8.

This systematic literature review also studies the situation that can trigger metacognitive regulation in CPS. In general, there are two conditions that can trigger metacognitive regulation in a collaborative task that are internal aspect and the external aspect. The internal aspect consists of the individual's conceptual system, individual motivation, personal satisfaction, and self-projection (Kim et al., 2013; Magiera & Zawojewski, 2011). The external aspect consists of the type of task and the form of interaction (De Backer et al., 2020; Iiskala et al., 2021; Molenaar et al., 2014). The result can facilitate researcher who wants to study metacognitive regulation in CPS. The follow-up of metacognitive regulation in a social context or collaborative context is developed by (De Backer et al., 2016) into two levels that are deep-level and low-level metacognitive regulation. The development of metacognitive regulation in a collaborative context that considers intra-group social interaction distinguishes four different types of metacognitive regulation that are accepted

social, co-constructed social, ignored social, and shared social metacognitive activities (Molenaar et al., 2014).

Conclusion

Bibliometric analysis showed that document publication of metacognitive regulation topics had significantly increased between 2018 and 2021. In this current year, this topic is expected to increase. There is a consensus that metacognitive regulation is not only studied in an individual context but also in a social context. The most impact authors that study metacognitive regulation in social or collaborative contexts are De Backer, Van Keer, and Valcke. Another term that is used to call metacognitive regulation in a social context is shared metacognitive regulation or socially shared metacognitive regulation. We can see in the co-occurrence network the relation between these terms. Collaborative problem-solving (CPS) is one of the conditions in a collaborative context. Two situations can lead to metacognitive regulation in CPS, namely, the individual's internal situation and the external situation. The individual's internal situation is related to knowledge and cognitive experience as well as individual motivation in solving problems, while the external situation is related to the assignment or problem to be solved collaboratively and the interactions that occur between individuals. Metacognitive regulation indicators in the CPS are divided into metacognitive orientation, metacognitive monitoring and metacognitive controlling, which are derived from metacognitive regulation in the individual context and considered to the interactions that occur in CPS. Knowing what situations can trigger metacognitive regulation and indications of metacognitive regulation in CPS can be helpful to findings, especially in designing student learning and studying metacognitive regulation in CPS.

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Chapter 3 - Influence of Authentic Materials in English Language Teaching on the Writing Proficiency of Rural High School Students in Bangladesh

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Chapter Highlights

- Recognizing the pivotal role of authentic materials, Bangladeshi high school teachers emphasize their crucial contribution to effective writing instruction, providing exposure to diverse writing forms and real-world language use.
- The study demonstrates that incorporating authentic materials in Bangladeshi high school classrooms significantly enhances students' writing proficiency, fostering improvements in vocabulary, grammar, sentence structure, and overall organizational skills.
- Various approaches are employed to develop authentic materials for students' writing proficiency, including the integration of technology in online classes and diverse writing assignments such as dialogues, charts, and short stories, showcasing a commitment to fostering creativity and skill development.
- Emphasizing the influence of authentic materials on both teachers and students, the investigation concludes that students exhibit heightened interest and motivation, leading to improved writing proficiency in the Bangladeshi classroom setting, where real-life contexts significantly impact the learning environment.

Introduction

In many countries including Bangladesh English is used as a global language. English is very essential in everyday life and English has four skills: speaking, writing, reading and listening. Writing is a very useful and productive skill that inspires learners to produce their own style of writing. Hedge (1988) points out that writing is an integrated process like the teaching of reading but the writing process is a highly sophisticated skill combining a number of elements, some of which are linguistics. Bilkis et al (2020) point out that writing is a productive skill where learners have to produce something, receive feedback from someone expert in writing, and edit based on the feedback. In this way, through writing and recurrent feedback and edits, students improve their writing gradually (Bilkis et al., 2020). In Bangladesh, writing is one of the most challenging parts for students.

Writing begins at primary schools and learners then develop their writing slowly. Students learn grammatical rules at the secondary and higher secondary levels and use these rules to make sentences. But the class duration of all the classes is the same, from 45 minutes to 1 hour or so (Akter, 2022), which is not adequate. According to Zamel (1983), writing is a process through which students can explore and discover their thoughts constructing meaning and assessing it at the same time. In the process approach, attention is paid first to the meaning and then to the form or structure of the sentences or organization. Akter (2022) has suggested about the secondary and higher secondary level that English questions keep a good scope where students have to write a good number of sentences. But, unfortunately, in the high schools of Bangladesh, the question pattern propels the students to memorize some paragraphs, essays, or so and make a good grade (Bilkis et al., 2020).

Proficiency in the English language is considered to be an indicator of success also in Bangladesh. A good level of proficiency is a prerequisite for getting a good job (Farooqui, 2014). Today, two differing views continue to influence the question of English in Bangladesh. One is that of consolidating Bangla as the medium of instruction in education, law and administration with minimum use of English and the other is the strengthening of English in all spheres of communication and education (Iqbal & Rabbi, 2009). In high schools, students have the opportunity to demonstrate their writing ability to appear in the government exam.

According to Ara (2020), in both Secondary School Certificate (SSC) and Higher Secondary Certificate (HSC) examinations, students are tested on their reading and writing skills in English. Students in Bangladesh including those of the Noakhali district follow a similar pattern of learning and teaching English, especially writing. In Noakhali most of the secondary schools are Bangle medium and students struggle to follow the process of writing. At present, students are conscious that writing is very essential for future success which encourages them to acquire language effectively and that authentic materials can be an alternative source.

Authentic materials are very useful for students' successful learning. In the English language teaching (ELT) classroom, the use of authentic materials influences students' performance and enhances their attention. In writing courses, authentic material plays an effective role to enhance students' language skills. Authentic materials are not textbook-based learning. It is the learning that students acquire from real-life experiences as they relate to their comfortable situations. Authentic material motivates learners to participate actively and helps increase their interest. The uses of authentic materials make easier the lesson and learners reduce the tediousness to build up their ideas and the content of the writing.

This paper investigates how authentic material influences the writing competence of High school students in the ELT classroom in Bangladesh and explores teachers' and students' perspectives regarding the benefits of authentic materials in a writing course.

Importance of the Study

Materials are a very central part of language teaching for teachers. There are varieties of resources teachers may use to create an effective learning environment. The use of authentic materials may give real purpose and meaning to a learner in the classroom setting. There are different types of authentic materials such as newspaper articles, movie reviews, advertisements, astrology columns, sports reports, obituary columns, TV guides, recipes, directions, notices, etc. These materials may be used in writing classes to create a better quality of writing. Using authentic materials will encourage students to learn effectively and be more proficient in writing. Also, authentic materials will develop learners' interest, attention and persistence in writing classes. It would be very beneficial for students to select suitable materials to enrich their knowledge and creativity. Authentic materials help students

to explore and completely develop ideas into writing. Students can combine classroom knowledge and real-world events from authentic materials. Abraham 2018 Authentic material is referring to the materials that represent real-life situations in the student's life such as images, experiences and stories of real-life (Abraham, 2018). Authentic material emphasizes learners' positive consequences in the classroom.

In the classroom, teachers are normally comfortable to use the textbook to fulfill the subject objectives, syllabus and variety of activities with the task. This process is very suitable for learners' learning and warming them up. The use of authentic materials increases the energy to achieve and pursue their education.

According to Arifa (2011), meaningful learning using authentic materials can make students understand and remember the materials within a long time. To relate what the students learned in class with the use in real life is needed to use authentic materials because these materials are really close to the students' real life. Students learn for the future for that they need to practice what they gain from writing. Authentic materials help to control the group and invite students to analyze their writing. Arifa (2011) authentic materials are used not only for teaching writing but also for teaching other skills in English subjects.

According to Darwish (2014), authentic materials and media "can reinforce for students the direct relation between the language classroom and the outside world by offering a way to contextualize language learning. This process happens when lessons are centered on comprehending a paragraph, a menu, a TV weather report, a documentary, or anything that is used in the real world, students tend to focus more on content and meaning than on language. Wafa (2014) Authentic materials are very interesting and stimulating. Raise a sense of curiosity in the students and bring the lively outer landscape into the learning situation.

The use of visual aids effectively influences students' writing proficiency. Visual aids are very important in teaching writing skills. Ahmed (2015) expresses ideas on visual aids that enable the learners to understand the main ideas of the lesson and they carry a message in themselves. Various types of visual aids demonstrate different messages to the learners that draw their attention and motivate them in the learning process. The usage of authentic materials improves students' ability to comprehend the learning meaningfully. They are able to generate ideas and grow the ability to answer questions properly. Students are familiar

with unknown word usage of authentic materials.

The focus of this paper is on how authentic material influences the writing competence of High school students in the ELT classroom in Bangladesh. This paper will explore teachers' and students' perspectives regarding the benefits of authentic materials in a writing course. Some researchers converse their opinion and theories as will be shown in the literature review. There will be some discussion about authentic materials in the classroom setting with a proper standard. Through a survey, there will be some outcomes regarding the use of authentic material appropriately which drives language competence.

Research Objectives and Research Questions

The objective of this paper is to investigate the teachers' and students' practices and perspectives on the use of authentic material. It will particularly investigate the impact of these materials on students' learning to independently produce writing in specific genres that can help them in their academic study, workplace and daily life. This will be achieved with an attempt to answer the following research questions:

1. What are the teachers' and students' perspectives on selecting materials in High schools in Bangladesh?
2. What approaches are being taken with regard to developing authentic materials in students' writing proficiency in a writing course?

Scholars' opinions regarding authentic materials in ELT

In the present world, students like to focus on reality-based education because it helps them to carry on further. The use of authentic material in the classroom changes students' perceptions and gives them more joy and enthusiasm for learning especially in writing. Writing is a difficult task for school students because they need to follow different steps and structures. It is a challenging process but once they understand it, it makes them comfortable. Writing is a creative process. Creativity is the ability to bring something new into existence, learners sit down to write with a mixture of ideas in mind but as they progress new ideas develop very smoothly.

Students need to have reality-based learning in the writing course that is authentic, simplified and easy to understand. Authentic materials will help to grow learners' communicative and interactional skills. Ahmed's (2017) study shows a positive impact of authentic ELT materials in the language classroom. He encourages improving Culture based ELT materials in the classroom that will be accepted by the culture and will enrich the traditional lesson. Ahmed mentioned all good and authentic materials have got the characteristics of having language input and skill development; a positive impression in the learner's mind; useful information to deal with language; an easy familiarity; a thought-provoking insight; a remedy and improvement in the deficiencies of the learning outcome; and a sense of security and confidence to the language teachers (Ahmed, 2017). The use of materials needs to provide an opportunity to use language for communicative purposes. The materials should be attractive, flexible and have clear instructions.

Authentic Materials and Cultural Content in EFL Classroom, Ferit Kilickaya (2004) mentioned that generally what this means is materials that involve language naturally occurring as communication in native speaker contexts of use, or rather those selected contexts where standard English is the norm: real newspaper report, for example, real magazine articles, real advertisements, cooking recipes, horoscopes, etc (Kilickaya, 2004). Here shows the authentic materials which are very significant to motivate learner learning. It can be culturally based which makes it more comfortable and enable them to interact with the real language and its proper use.

Huda Miftahul (2017) clearly describes teachers' positive attitude use of authentic materials in the classroom. He thinks that use of appropriate authentic materials students will learn more. According to Huda (2017), one important point is that when using authentic materials, we must bear in mind the learners' level. This is vital to obtain the highest level of benefit from using authentic materials in the classroom. In other words, if the materials are beyond the learners' ability or level, it might lead to demotivation and discourage learners from learning the target language. He also mentioned that Teachers must be aware that they can only benefit from the use of authentic materials, on one condition: that is if they are used in the classroom in the same context that they were designed for, in the real world (Huda, 2017). Teachers are responsible for use of materials and suitable activities for high school students. The use of material and activities make learner proactive and improve their writing skill.

Srinivas Rao (2019) have own point of view regarding the use of authentic materials. In the article he discusses different types of authentic material used in the ELT classroom which are newspapers, Magazines, Media, Brochures, Pamphlets and Flyers, Menus and Weather Reports help learners to enhance and understand the use of language in a different way.

He said the teachers of English are advised to concentrate on the needs and interests of the learners so that their main aim of teaching will be a productive one. (Srinivas Rao, 2019). He also said authentic materials are more economical and easily accessible anywhere and the teachers of English have been using them in their everyday classrooms. He further said that teachers should make use of the available materials to involve the learners more in the topic taught and encourage them to participate actively in the tasks that are given to them (Srinivas Rao, 2019). The ELT teachers need to be very conscious to choose suitable materials for their needs and levels. The teacher must adjust to the highly influential authentic material to the students and they will able to perform well in the classroom as well as in practical life.

Selyowati (2019) describes the authentic materials that can use to teach writing in the classroom for language teachers. Also, he shows different types of materials teachers use in writing. He said it is true that authentic materials, both spoken and written, provide real language use and context. (Setyowati, 2019). Also, he points out, authentic materials are said to be interesting and motivating if used in the classroom. It is like bringing the real world into the classroom. One example of authentic materials that can be used for language teaching is the use of short stories (Setyowati, 2019). A short story can be used to teach writing if it is motivational and beneficial to improve learners' different values. It also helps acquire language competence and develop creativity in writing.

Abraham (2018) illustrates that the use of authentic materials not only develops the student's success in writing but also creates a joyful atmosphere in the classroom. He said authentic material is also very useful because it is believed that authentic text creates a bridge between classroom knowledge and a student's capacity to participate in real-world events.

Teaching writing using authentic material for writing descriptive text gives students more chances to start writing based on their closer thing of them or their experience. Descriptive Writing is the clear description of people, places, objects, or events using appropriate details. An effective description will contain sufficient and varied elaboration of details to

communicate a sense of the subject being described (Abraham, 2018). Authentic materials help learners use their senses to present meaningful writing. This material allows students to elaborate their writing using appropriate topics.

Masood illustrates about the use of authentic materials develops writing skills and has a strong influence in the classroom. Authentic materials contain a lot of motivating energy and arouse students' interest (Masood, 2012). It is a great source of bringing the lively outside world into the classroom and ridding them of the continued, inexpressive and emotionless textbook language. In the new approach, the purpose of teaching is not merely knowledge about the language but communicative skills for everyday life. (Masood, 2012). Authentic materials can be even more useful to those learners who intend to go to a foreign country for higher education. Such materials will acquaint them not only with the language but also with the culture and value system of the country concerned (Masood, 2012). Authentic materials help a student to adapt to different environments and able to make learning meaningful and enjoyable. A student can improve writing by filling out the form, letter writing, invitation and instruction helpful for practical writing.

Anjarani (2017) demonstrates that authentic material is useful in motivating and developing language learning skills. He shows the effectiveness of this material grows learners' four skills. He said authentic materials are not prepared for language teaching but for real-life use for both interactional and transactional purposes.

Authentic materials are not only useful for understanding the language but also introduce the socio-cultural background of the language. (Anjarani, 2017). He added, there are two main purposes for writing namely, writing for academic purposes, and writing for functional or operational purposes. Some writing associated with the first purpose includes expository, argumentative, and descriptive essays. Functional purpose includes letters, memoranda, directories, signs, manuals, forms, recipes, and minutes (Anjarani, 2017). A good writer must have the ability to understand the information to deliver to the readers. Authentic materials create an interesting learning atmosphere and increase language skills.

Ekasari (2018) shows that the use of authentic material gives a positive impact on writing. He said writing is a skill of expressing ideas, feelings, and thoughts which is to be arranged into words, sentences, and paragraphs. He added, authentic materials give the students the

exposition to the real language and provide the students with the example of written products in real life and help the students learn and use foreign languages more indicative. Authentic materials give the student up-to-date information and helped the students' critical thinking in writing and developing the main idea. (Ekasari, 2018). These materials are interesting and inspiring because it invites students to explore more details about the subject and topic. Authentic materials build up all aspects of writing especially the vocabulary. It grows the writing ability and process to create productivity and creativity.

Geoffrey Maroko explains how authentic materials apply to classroom functional writing. He said authentic materials will also bring reality to the classroom and make interaction meaningful. Learning functional writing without real-life texts will widen rather than plug the gap between classroom writing and workplace functional writing.

Authentic materials, therefore, succeed in connecting the classroom to the outside world and bringing the outside world to the artificiality of the classroom. (Geoffrey 2010). Further, he explains, authentic materials will make the teaching and assessment focus on skills rather than the facts of language. The learners will be exposed to how authentic texts are structured and how they work in the business environments where they are created. Authentic materials will necessarily add variety to classroom activities and support a more creative approach to teaching. Thus, the learners will have a chance to practice the skills learned in the classroom in real-life situations. (Geoffrey 2010). Using authentic materials in language teaching shows a positive effect on students' success.

Ayudhia shows teachers are the mediator for students' writing skills. They can use some techniques to improve their writing based on designing the materials. Teachers should be able to guide the students in the writing process and look at the students' writing progress, giving some advice and suggestions in an appropriate way. And the last role is teachers as feedback providers (Ayudhia, 2017). It explains that the teacher is a vital role to teach writing and help students to improve fluency, organization, vocabulary, grammar, and writing procedure.

Research Gap

Bangladesh makes effort to develop ELT at every level of education. The country is moving forward area of linguistic competence. In the study, different researcher shows their points of

view regarding authentic materials. They illustrate very beautifully the use of authentic materials and how it positively influences writing. In the context of Bangladesh, there is not much research work done on authentic materials that limit affectivity and creativity in the ELT. Teachers are not properly introducing authentic materials as a result few of the teachers use authentic materials in the classroom.

Teachers are not very comfortable with authentic materials. This paper gives importance to the effective use of authentic materials and how they are beneficial to the teachers in their teaching and help learners learn the English language easily and comfortably. The study is in the context of Bangladesh and the proficiency of school students. The research shows different countries and the use of authentic material from their perspective. There is a contextual gap between research and study but can influence our perspective in different ways.

Different researchers demonstrate the benefits and outcomes of the use of authentic material in the classroom. Authentic materials lead students to fulfill learners' goals and expectations. These materials provide motivation and inspiration to develop and nurture critical thinking for future life. Writing is a good process to express oneself and make realistic solutions. According to Darwish (2014), the use of video and sound in delivering the topic of the lesson was more consistent in the student's perception of the vocabulary items, and the passages whether they were easy or difficult forming a pattern. Pictures can help testers and teachers to identify or manipulate structures, vocabulary, functions, situations and skills.

Methodology

This study has been conducted using surveys that collect data from two groups of people; teachers and students. The survey will find the fact by collecting the data directly from two groups of people. Information will be gathered by asking a set of questions to participants who represent a population of people with specific characteristics.

This is a simple question-based survey involving teachers' and students' personal perspectives about the use of authentic materials in ELT. Research data were collected from 40 secondary class school students and from a private school located in Noakhali Zilla using a simple questionnaire. Also, research data was collected from 10 teachers in the same

school. Teachers' ages ranged from 30-50. They all had experience in teaching for many years in the linguistic areas and have enough knowledge about ELT material. There are two questionnaires chosen to gather different viewpoints. Teachers and students shared their own experiences and outlooks.

The school was selected to be studied because it's a good range school in that area and the teachers are very active and delicates to their students. The school is situated in one corner of the village, and boys and girls are treated equally in terms of their education. The student population of the school is 2000 and collected data from 40 students which maintained a representative size and randomly selected 10 teachers for data to give a clear picture of using authentic materials in the classroom.

Ten teachers were asked questions to learn more about their expert opinions and perspectives on authentic materials in ELT and the important issues related to constructing the materials.

Research Design

A simple questionnaire for teachers and students was designed for data collection. The questions centralized on understanding and gaining insight into teachers' and students' perspectives. In their opinion, I would get their perception.

Participants

The participants were Noahkali Zilla Secondary school teachers and students. There were 10 teacher participants in a group for the survey. And for the students' survey, there were 40 participants.

Analysis Method

I planned to collect the data through simple questionnaires based on informal interviews with teachers and students regarding their perspectives on authentic materials and observe the real use of authentic material to develop students writing proficiency in classrooms. This study uses the correlation system. The questionnaire consists of ten simple questions for both groups of people with different sets of questions. Participants are allowed to answer

according to their personal opinion. The questionnaires are distributed to 50 selected participants who are willing to participate in the research. There are two methods used in this study which are the students' questionnaire survey and the teacher questionnaire survey. The aim of this study is to investigate how authentic material influences students writing competence. This collected information will help the study to understand easily.

Findings

The study wants to know the students' and teachers' perspectives and their thinking regarding the use of authentic materials' impact on writing proficiency. This chapter on the results of the study is summarized and demonstrates their outcome from the given questionnaire. Students' and teachers' outcome summary is presented below separately.

Summary of the Students' Views

Students are from secondary school level from class 8-10. Students' age levels are 14-16. Learners answer the simple question based on their experience and perspectives.

According to you, what is the authentic material? Describe the source of authentic materials that your teachers use in your English writing class.

According to the students, authentic materials are textbooks, posters, blackboard, multimedia, different types of charts and different kinds of content-related pictures. Sometimes School provides the materials and the teacher collects and creates the materials for the classroom. Teachers give us to write the paragraph using meaningful and proper words. Students think creatively and have the ability to use new vocabulary. In order to think in English, we can create meaningful sentences. The teacher gives assignments to write letters, emails, dialogue, charts, and short stories to develop writing skills. Also, teachers give to fill in the gaps, match the table and summarize the passages.

How do you get benefited from the authentic materials in an English language class? How does it help you to improve your English writing skills?

Benefits from the authentic materials are students improve good handwriting. Develop the vocabulary and learn to write new sentences with proper meaning. Also, they learn the writing process and grow the ability to create their own writing. Learners develop reading skills that help them to get the proper information from the subject. A clear understanding of information supports to improve better writing. They learn to think in English and are able to put together ideas in writing. The use of authentic materials helps to understand the topic clearly and effectively.

How useful do you think authentic materials are in the classroom?

Authentic materials are very practical and relate to real life, which influences cooperation in and outside of the classroom. It encourages getting much information from the materials for learners to carry out their study. Learners learn proper English with appropriate meaning and spelling. Uses of authentic materials are very much essential in the classroom. All the materials teachers use in the classroom are related to true life events and issues. Students grow more interested in learning and become attentive in the classroom. Students are motivated to move forward for success.

Why is authentic material important for an English writing class?

According to the students, authentic materials are important because it helps to combine the information for writing. It gives students more space to think, explore and create new sentences and learn more vocabulary. Authentic materials help students to enhance their knowledge about global and own culture. Learners can easily connect and express reality and their opinion of others. Learners can transform society and establish new things for society through writing. It is a powerful tool for the present world. Authentic materials inspire learners to write any type of formal and academic writing. Students sit for governmental examination based on writing and English classes prepares them to be confident and enthusiastic for any exam. During their school life, they sit for school and public examinations where they bring achievement because of good writing skills.

How would you evaluate authentic materials in an English writing course?

Students evaluate the authentic materials in an English writing course by writing the open-ended answer, submitting the assignment for classes and following different writing steps. Students write three examinations in the year and they get the opportunity to evaluate classroom learning in the exam. Different activities such as a poem, story-based competitions, and handmade posters with influential creative messages make students evaluate the authentic materials. Students participate in an essay writing competition with other schools and are honored with prizes based on a true writing evaluation for the students.

How does writing affect learning? How can students improve their writing skills?

Learners realize writing proficiency highly depends on Good Handwriting, spelling, grammar and punctuation. Learners acquire a strong sense of vocabulary, understanding of genre, text structure, and Organizational skills and higher-order thinking and practice regularly. They reflect that in order to develop writing skills they need to increase their word bank. Every day students have a writing class which affects positive learning. Students can improve their writing in and outside of class. In English classes, learners learn to summarize passages and write paragraphs and stories. Also, they learn to write Emails and letters and match the words that impact real-life circumstances, for example, students send text messages to their friends and write letters for different reasons. Also, every year school publishes a yearly magazine, and students have the opportunity to write different experiential stories and poems. Students are conscious that they have a tendency to memorize any answer without understanding because they want to pass.

What are the difficulties you face when you work on your own writing?

Students face many difficulties during writing which are: Some students do not know basic English lack vocabulary and do not take any effort to write.

They have difficulties in writing with correct spelling, which limits their writing. Another difficulty is inattentiveness during learning. Grammar plays a great role in writing because it provides enough information to the readers. Students feel that they are very poor in grammar but it expresses the form and structure of words and the arrangements of the sentences. They fail to structure their ideas and they feel a lack of knowledge of the unfamiliar topic.

Summary of the Teachers' Views

There are two teachers whose highest qualification are Masters in English. Four teachers' disciplines are Masters in Accounting. Others' qualifications are Master's in Political science and Bachelor of Social Science. There are two teachers who obtained a degree in English. One teacher has Bachelor's in English Language teaching (BELT) degree and others have teaching experience in the school.

How does authentic material affect a writing course?

Authentic materials are resources used in a classroom environment that is not designed for pedagogical purposes. They positively impact a writing course by providing students with opportunities to learn from real sources of literature or media such as news reports and movies. Although these materials are not catered for the classroom, they provide examples of how the language is written in the real world. This makes the writing course more effective as students learn different mediums of writing, both formal and informal. It increases engagement from the students as they more often relate to the authentic material than other pieces of literature from the curriculum.

Consequently, they are more likely to participate and be attentive. For instance, Shakespeare is a popular author that high school students are expected to read and analyze. However, by reading news articles students will better learn how to improve their writing as Shakespeare's writing is no longer applicable.

What is the main purpose of using authentic materials in a writing class?

The purpose of using authentic materials in a writing class is to give students exposure to different forms of writing and media. It allows students to learn in a non-threatening environment and make connections with the real world. This serves to motivate students and allows them to experience language as it is said in reality. Authentic materials such as the news provide students with not only ideas on how to structure formal writing but additionally provide students with real-life information and perspectives on current events. This can serve to be critical information that they can later use as references in pieces of writing for the class. Another purpose of authentic materials such as music videos can be to inform students

about the culture of the community. Media can serve not only to help individuals in their writing but improve their auditory skills. It can offer them new vocabulary and creative ways of thinking.

How can you adopt or modify authentic materials for the learners?

Authentic materials may be overwhelming for new learners and need to often be changed to better accommodate the learner. The teacher can either modify the material or adopt a better approach to teaching the material. Authentic material such as journal articles are very long and often has many complicated scientific words. The length may be intimidating for a learner, and thus the material can be modified to address only a small section rather than the whole thing. The teacher can instruct students to only read the abstract.

This allows students to get the exposure of reading a journal and gain knowledge, as the abstract is a summary, but they are not intimidated by the length. Another way this can be adopted is if the teacher makes a presentation on the new vocabulary presented in the journal and provides a lesson on the topic before learners are expected to read it. By doing this, learners are familiar with the content and are not too focused on the differences and can read it more smoothly. Additionally, the material can be printed on paper and distributed, or pdfs can be posted online. This better accommodates different learners and their specific reading styles. Teachers can gather student input on topics they are interested in and provide authentic material based on their current interests, which will increase student engagement and participation. It is important to filter authentic material for learners based on demographic and age groups. Many authentic materials such as movies or music videos may not be appropriate for all ages. It may contain offensive or vulgar language that should not be displayed in a classroom environment.

What are the factors affecting you to prepare authentic materials for the learners?

The main factor that affects the preparation of authentic materials is whether or not they serve to be an educational resource. Although all authentic materials can be useful in some way or another, it is important that in the constraint of time, only relevant authentic materials are discussed. The most important factor is that it must be related to course objectives and have the potential to be examined in multiple ways. The objective of the lesson can be to either

improve writing, reading, or listening. The authentic material should be chosen to fulfill one or more. For instance, a piece of media can be used to help students improve their auditory skills but also can be used to assign a reflection paper as homework.

Secondly, the time and effort the teacher needs to put into adopting/modifying the authentic material is an important consideration to make.

For instance, authentic material may serve to be a good resource but will need too much time to modify. In such a case the teacher needs to decide whether or not they think they can find an equally good alternative or will dedicate the time to the modifications. Thirdly, the actual demographic of the learners in the classroom. The authentic material must be relevant to their age group and target their specific language skills.

Presenting content that is too easy will not challenge learners enough and hard content will confuse them. However, this can be hard based on the classroom size as learners of different skills may be present and the teacher must be able to seek out appropriate material that accommodates everyone. Factors such as budget may also play a role in the preparation of authentic material. Is it financially possible to print out pages of print for a large class? The authentic material must be cross-referenced to check if it is from the source, if it is not it might cause complications. There are many different factors that all play a role in the preparation, but overall they all revolve around the course objective and the needs of the students.

How does authentic material development help in facilitating effective writing?

Authentic material helps facilitate effective writing as it provides learners with different examples of writing they can use as references in future writing assignments. By examining an array of formal to informal sources, learners are better able to differentiate between them and choose the appropriate writing style that meets the assignment descriptions. Authentic material encourages creativity in learners and allows them to expand their vocabulary. They can then use this vocabulary in their writing. They get exposure to creative writing and can think more out of the box when they write. By reading nonfiction authentic material, learners attain real-life knowledge that they can use as references and arguments in their writing and day-to-day life.

It helps learners become more fluent in the language and consequently more effective in their writing. Authentic materials create a more accepting environment, where learners can able to see casual language and learn from it.

How do authentic materials help learners to develop confidence?

Authentic materials help learners develop confidence as it establishes a non-threatening environment where learners can attain knowledge judgment free.

Often in many cases, learners are not even aware they are necessarily learning, but it is in such circumstances that they learn the best. They are not afraid to ask questions. More importantly, it increases learners' confidence as these materials are ones from everyday life. When learners can read and understand real-life media and writing, they now have the confidence that they can better communicate and write in the real world. It helps them navigate their lives in the community. Often learning in the classroom does not reflect the real world, and thus when students enter the real world they face challenges.

Incorporating authentic material minimizes the effects of such challenges. For instance, by reading and understanding a traffic ticket learners have improved their literacy skills but now also have the confidence that in the case they get a ticket they understand it properly. Authentic material often educates learners, with different topics in mind they can then be confident to start a conversation with others. It also serves to motivate them to continue learning and attain even more knowledge, even outside of class.

How do you help students with writing difficulties?

To help a student with writing difficulties, you need to first identify the areas they are having difficulty in. Is it forming ideas or having the right ideas but not knowing how to form the appropriate sentences, or is it grammar? There are various aspects to writing, and by identifying the main areas of concern one can better target them and help them improve.

One way to help individuals who struggle with organizing their ideas is by creating visual graphic organizers such as brainstorming charts or mind maps. These allow students to dump

all their ideas on paper and then organize related ones together to form arguments for an essay. Some students have difficulty writing because they're not educated enough on the topic but they are afraid to state that in class.

Presenting a lecture on the topic or giving students the right resources to access the information can help them focus on the writing and not stress over where they can get the information from. For some students, helping them read their writing out loud can help them identify mistakes. Often when we read in our heads we glance over mistakes, by reading it out loud we can identify what grammatically sounds incorrect and then fix it. For younger students, finding topics that they are interested in can help them stay engaged and enjoy the writing process. One of the most impactful ways to help students improve their writing and overcome difficulties is by providing constructive feedback. The feedback allows students to recognize what exactly their mistakes were, and understand what they can do next to improve. Finally, exemplars are often a useful means to help students learn how to write. By seeing others writing in a similar manner they know how to better structure their writing.

How useful do you think authentic materials are in the classroom?

Authentic materials are very useful in the class if they are chosen appropriately. An example of purposeful authentic materials is movies. After a novel analysis, a common technique used by teachers is to watch the movie in class. This excites the students, as they are under the assumption that it is not studying. However, the movie helps students draw parallels between the novel and the movie.

It helps students bring their imaginative characters to life, and determine if they are actually how they imagined, enhancing creativity. On a deeper level, students can analyze why certain parts of the book were omitted from the movie and which scenes were critical to the plot of the novel. Furthermore, authentic materials help students prepare for life outside of the classroom. The language is often more colloquial, as it is in reality, and they become more comfortable with it, boosting their confidence to comprehend and communicate.

Why is authentic material important for teaching writing?

Why is it important to use authentic material in an English class? Authentic material is

important to teach writing because it allows students to gain exposure to all the different forms of writing. Students can use the material to learn the different structures of writing such as an essay vs a newsletter.

Students can better understand the differences between formal and informal writing upon actually seeing both in the classroom. It can serve as a resource for general knowledge and vocabulary that students can implement in their writing. The use of authentic material in an English class, allows students to learn the language better. It makes learning more engaging and comprehensive.

How does authentic material affect the teaching and learning process in an English language class?

Authentic material improves the teaching and learning process in an English class. Teachers can use different authentic materials as resources to guide students in their writing. They can bring examples of authentic materials to teach the structure of different types of writing assignments or use media to gain student traction. It can bridge the gap between English class language and colloquial language used in the community/area that is shaped by cultural influences.

This will better help students learn the language and adapt it to communicate better in real life. However, it is important to help students distinguish what is good writing and bad, and what language is appropriate to use when. Some languages may be acceptable in oral communication but not in written assignments. Authentic material must be taught such that students understand and do not get even more confused. If done properly, the material serves as a great resource.

Conclusion

This study investigated two key research questions that translated into two key findings. This section of the thesis highlights these findings. The first question was about teachers' and students' perspectives on selecting materials for high schools in Bangladesh and the second was about approaches being taken with regard to developing authentic materials in students' writing proficiency in a writing course.

Teachers' Perspectives

The teachers' answers to the simple questionnaire showed teachers think that the appropriate types of materials and techniques applied by the teachers were important because those materials can help them be attentive in class. The materials that teachers applied in the classroom could give them a draw about the students' development in writing. Selecting materials in High school in Bangladesh, especially the use of authentic materials is very important to teach writing because it allows students to gain exposure to all the different forms of writing. Teachers can use different authentic materials as resources to guide students in their writing. They can bring examples of authentic materials to teach the structure of different types of writing assignments or use media to gain student knowledge. Authentic material must be taught such that students understand and do not get even more confused.

If done properly, the material serves as a great resource. According to McGrath (2002), there are eight criteria to be considered when choosing appropriate authentic texts. These are Relevance to the course book and learners' needs, Topic interest, Cultural fitness, Logistical considerations, Cognitive demands, Linguistic demands, Quality, and Exploitability. Authentic materials help students prepare for life outside of the classroom. The language is often more informal, as it is in reality, and they become more comfortable with it, boosting their confidence to comprehend and communicate. Selecting materials in High School in Bangladeshi classrooms need to think of the level and demand and interest of the students.

Students' Perspectives

The result of the finding shows that there was an improvement in every aspect of writing using authentic materials in the classroom. Students express that in Bangladeshi high school classrooms, authentic materials need to be available. Learner improves vocabulary, grammar structure and form and organization of sentences. Authentic materials drastically improve the students' writing proficiency and develop all aspects of writing. Using authentic material is very effective for teaching writing. It manipulates the learners' interest and motivation in the writing process. Authentic materials inspire students and invite them to explore more details about the topic so that they could write expressive writing.

As Ayudhia (2017) mentioned, writing includes developing some of your ideas further,

organizing your thoughts with your purpose in mind, and writing the first draft. Revising involves rethinking the content and organization so that these words say exactly what the writers mean editing means finding errors in grammar (Ayudhia, 2017). Writing offers techniques to improve and invites learners to spend more time finding an effective way to write. It explains that students need time to finish their meaningful writing.

In relation to the second question, different approaches are being taken with regard to developing authentic materials for students' writing proficiency in a writing course. Presently technology makes the student more advanced. In online classes, different types of materials such as newspaper cuttings, radio news, and wordless pictures are helpful for the students.

One of the approaches is collecting information from nature and digital or ICT method change the classroom atmosphere. The teachers' and students' answers illustrate that in the classroom teacher gives assignments to write letters, emails, dialogue and charts, and short stories to develop writing skills. Also, teachers give to filling the gaps, matching the table and summarizing the passages influents learners to be creative. Another approach is authentic materials such as the news provides students with not only ideas on how to structure formal writing but additionally provide students with real-life information and perspectives on current events. This can serve to be critical information that they can later use as references in pieces of writing for the class.

In conclusion, I want to emphasize that, as authentic materials are connected with real-life context, it is influential for teacher and students. The investigation observed that most of the students showed interest and motivation through exposure to some of the authentic materials because the nature of the activity appeared to influence proficiency and motivation significantly. In the context of Bangladeshi classrooms, the student's answers explain that teachers influence students' internal factors to enhance writing proficiency in a pedagogical environment.

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Chapter 4 - The Indian Knowledge, Western Education Program: An Indigenous Community-Led College Faculty Training

Sean M. Daley , Allison Smith 

Chapter Highlights

- This chapter discusses the Indian Knowledge, Western Education (IKWE) program, a National Endowment for the Humanities-funded faculty training program in which a cohort of non-Native American faculty members and program directors from multiple academic disciplines from a Midwestern community college were trained by American Indian community members on how to teach about contemporary
- Native peoples, their communities, and the issues they face, in culturally-appropriate manners utilizing Native voices and perspectives.
- Over the course of one year, cohort members attended monthly seminars led by Native community members on a variety of topics concerning contemporary Native peoples.
- Faculty cohort members also traveled to American Indian communities and American Indian events to meet with and learn from Native community members outside of an academic environment.
- The knowledge and perspectives faculty cohort members gained were then used to create new American Indian-focused components in existing courses or develop entirely new courses focused on contemporary Native peoples, their communities, and their issues.

Introduction

The *Indian Knowledge, Western Education* program, or *IKWE*, was a two-year National Endowment for the Humanities (NEH)-funded program designed to provide professional training and curriculum development focused on contemporary American Indian peoples to a cohort of non-Native American college faculty members and program directors from multiple academic disciplines. The purpose of *IKWE* was for non-Native American faculty members and program directors to develop components for existing courses/programs or develop entirely new courses/programs that focus on contemporary American Indian peoples, contemporary Native cultural traditions, and the issues that Native peoples and their communities face today. Faculty cohort members attended a series of seminars led by American Indian community members, during which time various cultural traditions and issues concerning contemporary American Indian peoples were discussed. Faculty members and program directors were also given the opportunity to meet with Native presenters one-on-one to further discuss the topics and issues. Faculty cohort members also traveled to American Indian communities and cultural events to meet with Native peoples and learn more about contemporary traditions and issues first-hand. The *IKWE* program officially began in August of 2018 and concluded in July of 2021. Currently, *IKWE* is being revised for a new college/university and a new faculty cohort.

IKWE Cohort Participants

In order to participate in *IKWE*, prospective faculty participants had to submit a written application to the directors of the program – Drs. Sean M. Daley and Allison Smith, the authors of this paper. At the time *IKWE* began, Daley was a professor of anthropology and the director of a center for American Indian Studies and Smith was a professor of art history and a department chair at Johnson County Community College in Overland Park, Kansas. Prospective faculty participants needed to submit an application that included a statement about why he/she wanted to participate in the program, a plan for how he/she was going to incorporate the materials learned into his or her teaching, such as new course components, new courses, a community engagement project, and so forth, and any prior experience working with Native peoples and communities, not that the latter was a requirement. Faculty cohort participants were selected based on their responses with special attention being paid to

how the cohort participants were going to incorporate the new materials into their respective curriculum and programs. Initially, Daley and Smith intended to accept ten faculty and program directors into the program, however, due to interest and the quality of the applications, twelve faculty members and program directors were offered slots. All twelve accepted; however, one cohort member (#12; see Table 1) withdrew eight months into the project because of a personal matter. The remaining eleven faculty and program directors successfully completed the program.

Table 1: *IKWE* Faculty Cohort Information

ID#	Title	Degree	Discipline	Gender
1	Professor and Chair	PhD	Philosophy	Male
2	Professor and Co-Chair	MA	Sociology	Female
3	Professor	PhD	English	Male
4	Professor	MA	Philosophy	Female
5	Curator	MA	Art Education	Female
6	Professor	PhD	English	Female
7	Director	MA	Community-Based Learning	Female
8	Professor and Chair	PhD	Anthropology	Male
9	Professor and Director	MA	Sociology and Sustainable Agriculture	Male
10	Professor	JD	Environmental Sciences	Female
11	Professor	PhD	Political Science	Male
12	Professor	MA	English for Academic Purposes	Female

As *IKWE* was funded by the NEH, faculty cohort members were compensated for their participation. Compensation included a \$2000 stipend; \$1000 at the end of the first semester in December of 2018, and another \$1000 payment in December of 2019 after the newly designed courses or course components were offered and/or incorporated into existing courses. Faculty cohort participants were asked to sign a contract committing to the project. Failure to complete the program would result in a forfeiture of the participant’s stipend, either partially or fully depending at what point in the project he/she withdrew. Additionally, participants had all program travel-related costs to American Indian communities and cultural events covered; this included transportation, lodging, food, and any associated admission

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fees. Each participant also received a modest library of 18 scholarly books written by Native and non-Native scholars focused on current American Indian issues, as well as a few classics in American Indian Studies. These books included Vine Deloria, Jr.'s, *Custer Died for Your Sins*, Roxanne Dunbar-Ortiz's, *An Indigenous People's History of the United States*, Tommy Orange's *There, There*, and Andrés Reséndez's *The Other Slavery*, among others.

The books were meant as a starting point for faculty cohort members to further develop their scholarly book collection on contemporary American Indian issues as well as resources to supplement the course components and courses being developed.

IKWE Native Community Member Participants

In all, *IKWE* participants (see Table 2) had the opportunity to attend a series of seminars led by Native community members during the duration of the project. The first ten Native community members met with *IKWE* participants in-person; the last three met via Zoom due to the COVID-19 pandemic. The last presenter, #13, while non-Native, is a tribal historic preservation officer for one of the federally recognized Delaware/Lenape nations in the United States and has a great deal of knowledge on Delaware/Lenape peoples and their ways. Native community members who participated represented a wide-range of life experiences. They ranged in age from their late 20s through their late 70s. Some were born and raised in reservation communities, while others were born and raised in urban Indian communities. Several Native community participants were involved in the Red Power Movement and organizations such as the American Indian Movement and Woman of All Red Nations, and some were involved in present-day Indigenous community activism. A few participants were involved in Native cultural life as singers and dancers in the pow wow circuit and Indian artists, while a few others were involved in education, particularly higher education. A couple of participants worked for their tribal governments and non-Native local and state governmental agencies. Native community members were compensated for their time. Each Native community member received a \$250 honorarium and all travel-related costs associated with his/her presentation were covered.

Table 2: *IKWE* Native Community Members Information

ID#	Tribal Affiliation	Topic Covered	Gender
Year 1			
1	Acoma and Diné	Navajo language preservation	Male
2	Dakota, Assiniboine, and Oddawa	Sovereignty and self-determination	Female
3	Cheyenne River Sioux	Native maternal-child health and Native women’s issues	Female
4	Prairie Band Potawatomi	Contemporary Native life in Kansas	Male
5	Oneida and Anishnaabe	American Indian dance	Male
6	Meskwaki	American Indian dance	Female
7	Paiute and Diné	American Indian music	Male
8	Choctaw	Contemporary American Indian literature	Male
9	Lakota and Mohawk	Contemporary American Indian art	Male
10	Tohono 'Oodham and Ponca	Contemporary American Indian politics	Female
Year 2			
11	Cheyenne River Sioux	Contemporary American Indian rights	Female
12	Cheyenne River Sioux	Contemporary American Indian rights	Female
13	Non-Native	Delaware/Lenape history in Pennsylvania	Female

Seminars and Events

In all, eleven seminars were held; nine the first year and two the second year. Two of the seminars – American Indian Music and Contemporary American Indian Rights each had two presenters. During each seminar issues surrounding contemporary American Indian life were discussed. Issues Native community members discussed with the faculty cohort members included contemporary American Indian life in the Midwest, US Federal Indian laws and policies, contemporary sovereignty, Native language preservation, contemporary American Indian music and dance, contemporary American Indian literature, contemporary American

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Indian visual art, and other topics. Seminars were usually two-hours in length. The general format was the first hour was a presentation by a Native community member, and that presentation was open to all faculty, staff, and students at the community college. The second hour was a question and answer period reserved solely for *IKWE* faculty cohort participants. This gave them the time and ability to discuss the topics in further detail and to ask questions more tailored to their individual projects for the program.

There were also two trips associated with the program. The purpose of the trips was to allow faculty cohort participants a chance to visit Native communities in-person and to visit with Native peoples in their communities and at events that were for Native peoples. The first trip was a five-day trip in May of 2019 during which time faculty cohort members went to New Mexico and visited several American Indian communities, primarily Rio Grande Pueblo communities. At one Pueblo community, a feast was held in honor of the *IKWE* faculty cohort and they were given a tour of the original pueblo by tribal council members. They were also given the opportunity to visit with tribal elders and community members to learn more about life at this pueblo, both historically and presently. Faculty cohort participants also visited several tribal museums and Pueblo cultural centers allowing for visits with numerous Native scholars and artisans.

For the second trip, faculty cohort members attended the annual American Indian Art Show at Cahokia Mounds State Historic Site in Collinsville, Illinois in November of 2019. During this time, they met and visited with numerous contemporary American Indian artists who were participating in the art show. Additionally, faculty cohort participants were able to meet with archaeologists and historians who worked at Cahokia and who were knowledgeable about Cahokia and the Native people who once lived there.

The COVID-19 Pandemic's Disruptions

Regrettably, the COVID-19 pandemic caused serious issues the final several months of the project. Most notably, the faculty cohort were unable travel and visit any Indian communities or attend any events in the spring of 2020. Two trips had been planned. The first was a trip to a reservation-based Indian community in Kansas, and the second was a trip to the Gilcrease Museum in Tulsa, Oklahoma. The Gilcrease Museum has an extensive collection

of contemporary Native art, as well a vast archive of Native American material culture. Additionally, the community college involved in the project hosted an annual competition pow wow the first weekend of every May for the previous 13 years. The 2020 pow wow was cancelled. Had it occurred, this would have given the faculty cohort an additional opportunity to meet and visit with Native community members. Fortunately, Daley was able to schedule three additional speakers via virtual presentations in the spring of 2021 to continue the discussions on contemporary Native peoples and issues. Due to the issues caused by the pandemic, funds that were set aside for travel were reallocated to cover the stipends for the three speakers in the spring of 2021.

Results

Outcomes: Course Components and Courses Developed

In the end, all the faculty cohort participants developed and implemented new course materials, new courses, and/or new programs focused on contemporary Native peoples and cultures. Until this point, the majority of course components and courses at Johnson County Community College focused on Native peoples in a historical perspective. The components, courses, and programs developed in the *IKWE* program greatly changed the conversation concerning Indian peoples at this college and now there is an even split between components and courses focusing on Indian peoples in a historical perspective and a contemporary perspective. Table 3 provides a synopsis of the projects.

Table 3: Developed Native-Focused Course Components, Courses, and Programs

ID#	Title	Discipline	New Course Components, Courses, and Programs
1	Professor and Chair	Philosophy	Developed a new course component for an introductory ethics course in which American Indian ethics are examined and compared to the ethical belief systems of other cultural groups. A short writing assignment and a paper assignment are parts of the examination and comparison process.
2	Professor and Co-	Sociology	Developed a new component on American Indian families for “Sociology of Families.” This component included print

	Chair		and video resources for students.
3	Professor	English	Three new components were added to “English Composition II.” These components were Native languages and linguistics, missing and exploited Native women and girls, and Native peoples and suicide. Readings, discussions, and class projects are a part of these new components.
4	Professor	Philosophy	Several lectures, readings, and discussions on American Indian philosophies were added to “Honors in Introduction to Philosophy” focusing on epistemology and metaphysics, identity and freedom, and ethics and values.
5	Curator	Art Education	A museum docent training manual was developed to help dispel myths and stereotypes about Native peoples found in classic mainstream American visual arts from the 1800s and 1900s. Also, a series of training sessions were organized for art educators to shift the dialogue about Native art from non-Native perspectives to emphasizing the voices of Native artists themselves.
6	Professor	English	Three Native focused books were adopted for an English composition course: Tommy Orange’s <i>There, There</i> , Sherman Alexie’s <i>The Lone Ranger and Tonto Fist Fight in Heaven</i> , and Bob Blaisdell’s <i>Great Short Stories by Contemporary Native American Writers for Introduction to Fiction</i> . There were numerous graded writing assignments and discussions centered on these books as well.
7	Director	Community -Based Learning	The Community-Based Learning Program partnered with a local American Indian urban center on several evening events open to the public focusing on contemporary local

			Native cultural traditions, including American Indian art and Indigenous agriculture and plant use. Presenters and volunteers included faculty, staff, and students from the community college involved with this project.
8	Professor and Chair	Anthropology	A YouTube channel was created with six videos focused on archaeology and Native peoples. The six short videos focus on a range of topics including “Archaeology and Representation” and “Cultural Resource Management and the Native American Graves Protection and Repatriation Act.” The videos can be used in several courses currently offered by the anthropology department.
9	Professor and Director	Sociology and Sustainable Agriculture	A component for “Sustainable Agriculture” focused on Indigenous agroecology (the application of ecological concepts and principals in farming) and sustainability was developed. Also developed was a component for “Sociology of Food” focused Native food knowledge. Finally, a component was created for “Introduction to Sociology” focusing on racism and colonialism in the Native experience.
10	Professor	Environmental Sciences	A new environmental sciences course, “Native and Western Views of Nature,” was developed and a case study in an honor’s environmental studies course on Indigenous perspectives on managing salmon in the Pacific Northwest US and Canada was created.
11	Professor	Political Science	Lectures for two political science and international relations courses on Native cultural identity and its connection to politics were developed. The lectures focused mainly on two topics: cultural change in Native communities and US and international laws concerning Indigenous peoples.

Discussion or Conclusion

The purpose of the *IKWE* program was to bring the focus on Native peoples and their communities from the past into the present in a college curriculum and to have non-Native faculty work with Native peoples to incorporate Native voices and perspectives into that curriculum. The faculty in the cohort engaged with Native peoples regularly during the program and had opportunities to visit Native communities and attend Native events. These were things that many of the faculty cohort participants had not had the chance to do previously and this gave many of them a new understanding of Native peoples. Additionally, faculty cohort participants integrated what they learned and experienced into their respective curriculums and projects. As such, it is fair to say that the *IKWE* program was successful.

What made the *IKWE* program successful was its approach which was principally informed by community-based participatory research (CBPR). CBPR is an approach used by researchers in which community members are involved in all steps of the research project - design, implementation, evaluation, and dissemination; research that involves and affects them and their community. CBPR recognizes and utilizes the strengths that community members bring to a project. These are frequently strengths that the researcher lacks as often the researcher is not a part of the community. CBPR also seeks to form an equal partnership between the researcher and the community where both parties benefit from the research (NIMHD 2018). While the *IKWE* program was not true CBPR because it was not a research project, the idea of keeping the community involved as much as possible was central. One of the authors of this piece, Sean Daley, has been working with American Indian peoples and communities for over 25 years. Much of his work has been in the areas of Native health and education. The CBPR approach has been crucial in his work and that of the research team with which he is involved. Native community members gave input formally and informally throughout the whole *IKWE* project. Without this approach, we do not think this project would have been nearly as successful because Native community members who participated had a stake in the project success since they were integral to it. Additionally, as with many funded-projects, there was a project manager. In the case of *IKWE*, there were two project managers because the first project manager left the project and the college shortly before the end of year one and another project manager was hired for the remainder. Both *IKWE* project managers were Native and active participants of the Native community.

Furthermore, because of the CBPR approach, the *IKWE* program was a step, albeit a small one, in the decolonization of Western education. Decolonization is about cultural, psychological, and economic freedom for Indigenous people with the goal of achieving Indigenous sovereignty - the right and ability of Indigenous people to practice self-determination over their land, cultures, and political and economic systems (Belfi and Sanderford 2021). It is a response to 500-plus years of colonialism. In the United States, the type of colonialism that has taken root is settler colonialism:

“...an ongoing system of power that perpetuates the genocide and repression of indigenous peoples and cultures. Essentially hegemonic in scope, settler colonialism normalizes the continuous settler occupation, exploiting lands and resources to which indigenous peoples have genealogical relationships. Settler colonialism includes interlocking forms of oppression, including racism, white supremacy, heteropatriarchy, and capitalism. This is because settler colonizers are Eurocentric and assume that European values with respect to ethnic, and therefore moral, superiority are inevitable and natural. However, these intersecting dimensions of settler colonialism coalesce around the dispossession of indigenous peoples’ lands, resources, and cultures” (Cox 2017).

One of the many issues with settler colonialism, especially in regard to the current Western education system, is that Native peoples have become a static remnant of the past; they are often portrayed and seen by non-Natives as noble savages fighting to save an uncivilized and doomed way of life. Mainstream American school curricula, especially at the elementary, middle school, and high school levels, have not done well at bringing Indigenous peoples into a modern context. Much of the curriculum used in history, social studies, literature, and the other classes in which elementary, middle school, and high school students are taught about Indigenous peoples still portrays them as frozen in time, living during the periods of European and American colonial settlement and Western expansion. The incorrect information and uninformed perspectives learned in school usually follow students into their college and university courses. It is at this time that the college or university instructor usually has to begin correcting 18 plus years of miseducation, that is if he/she is aware of the mistakes and inaccuracies himself/herself. Additionally, there is often an assumption and bias in Western education that Native people today are somehow less authentic than their

ancestors. As noted by Tuck and Yang, "...Native American is a racialization that portrays contemporary Indigenous generations to be less authentic, less Indigenous than every prior generation..." (2012, 12). Non-Native peoples and communities are allowed to change with time; for example, no one considers a White American as less authentic because he does not wear 1880s style clothing, yet the same does not apply to Native people. A Native person wearing sneakers and jeans, or who has short hair, is often seen as less authentic by non-Natives who are not familiar with contemporary Native peoples and cultures.

While the *IKWE* project was not a decolonization project, it was focused on bringing Native peoples into a modern and contemporary context in an academic setting, and it also allowed Native peoples voices in Western higher education. American Indians have the lowest representation of any ethnic, racial, or political group in the United States. We say political group here because according to the US federal government, American Indians are technically a political group because of treaties and the unique relationship between the federal government and tribal nations (Balu 1995; Daley and Daley 2023). According to the Postsecondary National Policy Institute, Native peoples comprise less than 1% of the US undergraduate and graduate student population, have the lowest degree attainment rates and have had a decrease overall in undergraduate and graduate enrollment between 2016 – 2020 (Postsecondary National Policy Institute 2021). As with any minoritized or marginalized group, having people from your group or your community in colleges and universities is a positive and empowering experience for most, while not encountering them is often problematic. Seeing and interacting with students, staff, and faculty that look like you and are a part of your community helps in the success of both undergraduate and graduate students, as well as junior faculty.

Lastly, and to some degree most importantly, we believe this program is easily replicable. For others to take the approach employed in the *IKWE* program and use it to create and revise American Indian-focused curriculum and programs at other colleges and universities, and to work with the Indigenous people and communities in their respective regions, is very doable. Of course, it will take time to develop the relationships and trust if they are not already there, but it can be done with time, patience, dialogue, and collaboration with Indigenous peoples.

One final comment, Sean Daley left Johnson County Community College and went to Lehigh

University in Pennsylvania in August of 2020 during the height of the pandemic. Except for the project manager, who also moved to Lehigh University, everyone else involved with the *IKWE* program remained at Johnson County Community College. Due to the fact that this was during the pandemic and COVID protocols were in place at Johnson County Community College and Lehigh University, as well as in many other places through the US, in-person seminars, meetings with faculty cohort, and travel were not allowed. Because of all of this, we feel as though the project did not get a chance to conclude properly.

Notes

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SECTION II - STUDIES ON SCIENCE

Chapter 5 - Gluskape*: A New England Indigenous Cultural Hero Whose Stories Impart Traditional Philosophy

Lewis Mehl-Madrona

Chapter Highlights

- The idea of restoring balance between male and female elements inherent in Wabanaki culture by considering the removal of personified male creators in the contemporary revitalization of Wabanaki culture.
- The diversity of creation stories within Wabanaki culture, with variations in the emergence of man and woman from elements of nature. The incorporation of indigenous knowledge, biology, and reflections on nature's capacity to generate unanticipated results.
- Examining Gluskape's role in Wabanaki stories and proposing that he, along with figures like Nanabozho and Wiskiadjak, serves as a cultural mediator between a distant creator and Earth. Drawing parallels with similar figures in other Algonquin cultures and suggesting the relevance of such mediating figures in various belief systems.

* No agreement exists as to how to spell Gluskape in English, so I will follow the spelling used by the source I am citing; therefore the spelling will change from passage to passage

Introduction

Stories were used by Native people as a means for teaching Europeans how to appreciate Native American philosophy and as a means for establishing sovereignty. Cultural and national survival depended upon positively influencing European's views of North American aboriginal people (NAAP). Many, even the famous environmentalist Henry David Thoreau, began with the Rousseau's notion of the noble savage, a historical character who could only disappear, like the last Mohican (Sayre, 1977). Sayre found that Thoreau moved toward a more realistic, admiring view through his contact with the Penobscot in Maine, but never completely abandoned his idealizing view of the noble savage. Kucich proposes that Thoreau's Penobscot guides actively worked to influence his views as they did to those of other European-derived people (EDP) (Kucich, 2012). To survive, NAAP worked to transform their invaders' views through story.

Thoreau's guide for his first Katahdin trip was Joe Aitteon and, for his second, Joe Polis. These were the storytellers, guides, and elders who provided the material for Joseph Nicolour's book, *Life and Traditions of the Red Man* (Nicolour, 1893). Glooskap must have been among the material that Thoreau heard from Aitteon and Polis. Kuchis writes:

What is most striking from this Penobscot perspective is how often Thoreau gets lost in the Maine woods – at times literally disoriented in the physical landscape, but more frequently swamped in the labyrinth of an unfamiliar cross--cultural environment that took shape along this frontier between the United States and the Penobscot world. Thoreau and his Penobscot guides learn to navigate a landscape that is at once familiar and strange, serene and unexpectedly lethal, and together they learn an old truth – that one must first become lost to see the world anew.

Glooskap is one of many characters who helps outsiders see the world anew from the Wabanaki perspective. He is a mythological character, appearing in each Wabanaki Confederacy tribe's stories (Redish & Lewis, 2014). He created the Penobscot River, harmonized the world, and eliminated or reduced the size of animals that would threaten humans. He established the first human village and then disappeared into the southwestern-most portion of Wabanaki territory, awaiting a time when he would return to defend the

Wabanaki at a time of great danger or if he was needed again to return the world to balance and harmony.

The Origins of Gluskabe

Gluskabe is a central figure in Penobscot cosmology; MacDougall (MacDougall, 2004) says, “he teaches them all the important traditional beliefs about the world and about how humans should behave... [The] “Great Spirit created Gluskabe (p. 36).” He was the first man that the “Great Spirit” –Creator--ever formed and received spiritual teachings for the humans to come. He is the Wabanaki version of Nanabush for the Anishnabi/Ojibway, Old-Man for the Blackfoot, and Wiskiadjak for the Cree.

Molly Spotted Elk (Spotted Elk, 2003) credits Gluskabe with creating the earth, but in Joseph Nicolai's version of his origin, he is made by “Great Being,” or *Gici Niwaskw* (pronounced gih-chee nih-wahsk). In the version on the Native American languages website, *Gici Niwaskw* has no human form or attributes, including gender, and is not personified in contrast to Nicolai's version which presents *Gici Niwaskw* as a human-appearing male. In the Native Language's version of Gluskabe's, *Gici Niwaskw* sends Gluscabi to the earth to finish the job of eliminating dangerous animals and creating balance and harmony (Redish, 2015). In Nicolai's version, *Gici Niwaskw* assembles *Gluscapi* on the earth and appears personified as a human male. I suspect the personification found in Nicolai is a Christian influence, for few other North American creation stories have a personified male being. For the Lakota, the word is *Dakuskanskan*, which literally means “that which moves all that moves.” The word refers to a mysterious being who imbues objects with the gift of being able to move themselves and creates the world from a distance. The Lakota say that *Dakuskanskan* lives at the other end of the Milky Road (Way in English). Of interest, recently the only black hole in this galaxy was discovered in that location, which is the only spot in our galaxy where creation is still actually occurring. The Governor of New Brunswick, Arthur Hamilton Gordon, is quoted as saying in 1853 that Gluskabe mysteriously appeared from nowhere (Adams, 1873).

Likewise, the Ojibway/Anishnabe did not have a personified God/Creator, but also had a Gluscabi-like character as mentioned above. The same held true for the Cherokee and the Cree. In the Hopi Creation story a mysterious being directs the tumultuous forces of nature,

the wind, the volcanoes, the waves, and brings into life Two Twins to finish the process and oversee the creation of human beings. Similarly, I could find few references in the traditional stories of which I am aware to creation of white and black men, and, again, I suspect that this was a contemporary insertion needed to explain the origins of paler and darker people. Darwin, to his credit, wondered why people were making such a fuss over a relatively minor gene.

In Molly Spotted Elk's story about Gluskape, he makes the earth and the first man (Spotted Elk 2003)(88-90). In Joseph Nicolai's version, Gluskape (spelled Klose-kur-beh, or The Man from Nothing) is the first man in the world (Nicolai, 1893). In Nicolai's version a "Great Being" awakens Klose-kur-beh to thought and feeling (p. 8). That "Great Being" comes from "a beautiful brightness in the heavens over the front of his face," its having been formed from the many colors of the rainbow. The brightness approached him to almost touching distance and he felt its warmth before he fell into a deep sleep. When he awoke, he saw a person resembling him standing in the north and facing the east. The Great Being raises his hand and passes it from east to west and lightening follows that course. Then he passes his hand from south to north and lightening also follows that course. Then he becomes aware of the power of the being standing in the North to bring him to life. That Being acknowledges that he is correct to believe in the power of this Great Being, who then invites him to stand up. Klose-kur-beh does so and feels the strength to stand and to move pouring into his body (p. 8-9). Next the "Great Being" makes the first man in their image. He faces the east and causes the heavenly bodies to move toward the west and night to come toward them through the movement of his eyes. He passes his hand from north to south and lightning follows the passage of his hand. Then he passes his hand from the west to the east and the lightning disappears into the darkness present there. An image of a man appears in the form of a cross which is the image of a man in the dust, whose head faces the north, feet face the south, left hand faces the east, and right hand faces the west. The "Great Being" tells Klose-kur-beh to turn away toward the west so that he need not witness the rising of the man from the dust, and then to travel north to find his companions. The "Great Being" will teach Klose-kur-beh, and Klose-kur-beh will teach all the others.

Mi'kmaw tribal member Michael William McDonald relays another version of their creation story (McDonald, 2017). He says that an area of downtown Halifax, Nova Scotia, up to what is now Point Pleasant Park, was called Amntu'kati, or "the place of spirits," and is the place

where the Great Spirit Fire sat, whose sparks gave birth to the seven original families of the Mi'kmaq people. The seven families later became the seven districts of the Mi'kmaq'ik. Historically the people would gather there for seven days after the first full moon of the frog croaking month in springtime to celebrate the creation of their people. He and other sources cite as their authority Stephen Augustine, who told on April 8, 1977, in Halifax, the "Mi'kmaq Knowledge in the Mi'kmaq Creation Story: Lasting Words and Deeds." Augustine received these stories from his grandmother, Agnes (Thomas) Augustine, who heard them from her husband Thomas Theophile Augustine, otherwise known as "Basil Tom." He also relied on information provided by his great-grandmother Isabel (Augustine) Simon (Young de Biagi, 2008, p. 252). Fretz (2015) reports that Augustine told him the details of the story could vary in accordance with the audience. McDonald said that Isabell Shay Knockwood gave a slightly different variant of Augustine's story in the 1980s.

This version of the Creation Story goes as follows:

The Creator who sat in Wa'so'q [Spirit World], created the first born, Na'ku'set, "the Sun". The Creator also sent a bolt of lightning across the sky that created Wskitqamu – "the Earth." From that same bolt, Glooskap was created out of the dry earth. After being created, Glooskap laid upon Wskitqamu, on his back with his feet and hands pointing to the Four Directions. From another bolt of lightning came all living things that walked, crawled, and swam. The vegetation was also created from this same bolt. Glooskap watched the living things move about the world freely and wished to have the same freedom. So, the creator granted his wish and sent out a third bolt of lightning which allowed Glooskap to stand and move freely on the Earth.

The Creator then sent Nukumi, Glooskap's grandmother, to teach him how he should live. She was created from a rock transformed into the body of an old woman who became his Elder. Glooskap and Nukumi traveled the Earth. They met his mother, Níkanaptekwísqw, who shared the knowledge about the cycles of life and the future. Born from a leaf on a tree, she brought love, wisdom and the colors of the world. One day Kitpu the eagle spirit came down from Wa'so'q to speak to Glooskap. He told Glooskap that soon He and his grandmother had to leave this world and travel to the west and to the north and there they shall enter the spirit world. As Kitpu spoke to Glooskap the Creator sent down another bolt of lightning which created a blazing fire. Then Kitpu told Glooskap, that the fire created by this final lightning bolt is the Great

Spirit Fire. It sits in “Amntu’kati” – “the Spirit Place or Place of Spirits” While you journey to the Spirit world, your “the Spirit Place or Place of Spirits” While you journey to the Spirit world, your mother and nephew shall look after the Great Spirit Fire. After 7 winters have passed a spark will fly out of the Great Spirit Fire, and when it hits the earth, a woman will be created. And another spark will fly and another woman will be created, and then another spark will follow, until 7 women are created. And then, over time, more sparks will fall out, and then 7 men will be created. And together these 7 women and 7 men will form into the 7 families of the Mi’kmaq people. The 7 families will then disperse in 7 different directions. Once the 7 families reached their destinations, they would further divide into 7 clans that are related by kinship. Each of the 7 original families and their 7 clans would have their own “Maqamigal-wutan” or “territorial area” for their subsistence, so they would not disturb the other Families.” Each of the 7 Originals families will have a Nikanus Sakamow, or Head Chief, and each of 7 clans will have their own Sakamow “Chief”. Each of the 7 Nikanus Sakamow will represent all the 7 Sakamow’s of his family in his Saqamawutis– territory of the head Chief and this will be known as his Kmitkinu – “District”. And all 7 Kmitkinu Nikanus Sakamow’s – “District head chief” will be represented by one “Kji’saqmaw” or “Grand Chief”. After 7 winters have passed each of the 7 Nikanus of the 7 original families along with their Kji’saqmaw would return back to the place of the “Great Spirit Fire” in “Amntu’kati” where they will celebrate for 7 days in song and dance over the creation of the Mi’kmaq people. And each spring following the first, the 7 leaders of the 7 original families will return with their kin back to Amntu’kati after the first full moon of "Tquoluiku," “the frog croaking month” and celebrate for 7 days. During these 7 days, all the people will dance, sing and drum in celebration of their continued existence in Mi’kma’kik.

This story is consistent with other creation stories in which the creator of humans and Glooscap sits in spirit world and sends energy to the earth. The Great Spirit Fire that creates the first seven women and then the first seven men comes from the Creator in the spirit world. This story explains the vicious battles between the Mi’qmaq and the English when the English chose to occupy Amntu’kati, and actually build their fort there.

Fretz (2015) clarifies these details based upon his conversations with Augustine. He writes that the first level of creation comes with Creator, the giver of life, from the direction of the

sky. We are not told the origins of the Creator, who is genderless. Creator's origins and Creator are both great mysteries. The second level of Creation comes with the sun, whose direction is the Center for the Mi'qumaw. "We are linked to the spirits of our ancestors by our shadows on the earth (p. 173)." The third level of creation is Mother Earth, upon whom we stand, and who supports the spirits of our ancestors. We are inseparable from Mother Earth. The Fourth Level of Creation is represented by the creation of Gluscabe. The directions of his head, feet, and arms is consistent with what has come before. He is created from the elements of Mother Earth, energized by a bolt of lightning. He lies in this state for another winter until a second bolt of lightning forges his fingers, toes, and other appendages. He lies there for another winter until hit by lightning amidst a ferocious storm. Gluscabe walks around the world and returns to the site of his creation. He wonders about his purpose, and a bald eagle appears, who tells him he will shortly be joined by his family who will reveal his purpose. The fifth level of Creation is represented by Grandmother in the South, symbol of wisdom, knowledge, and animal life. The Giver of Life creates her from a rock and the morning dew. She teaches Gluscabe *netukulimk*, the Mi'qumaw philosophy of ecological sustainability. Gluscabe's nephew represents the fifth level of creation. He is created by a whirlwind blowing through the ocean in the direction of the rising sun. "The water foamed and rolled up and the foam was pushed along the beach, picking up sand and debris. When it came to rest on sweet grass, it came to life with the help of Grandfather Sun and Mother Earth (p. 174)." Nephew reminds Gluscabe that he must consider the generations yet to come and must honor the ocean. "In the seventh level of creation, Kluscap's mother appears, formed from a dew-colored leaf with the help of Grandfather Sun and Mother Earth (p. 175)." She teaches compassion, love, and understanding. "The seven sparks left over from Kluscap's creation kindled with seven pieces of wood and fanned by whirlwind began the Great Spirit Fire in the sixth level of creation. Later, sparks from this fire formed seven men and seven women who learned the teachings and spread out to form seven districts of Mi'kmaki (p. 175)." This version of the creation story intimately involves nature in the process and can be linked to contemporary systems theory in the manner of two-eyed seeing, including concepts of spontaneous generation and emergent properties.

In an Abenaki creation story told by Joseph Bruchac (Burlington, Vermont, University of Vermont, January, 1993), Gluscabe was created by the dust left behind after Tabaldak created the humans. Tabaldak first tries to create humans out of stones, but that doesn't work so well. They are hard-hearted. Tabaldak breaks up the stones and leaves them scattered

around Vermont. Then Tabaldak makes humans out of wood, and that works much better (Johnson 1998). Humans arrive before Glooscap in this version. In a Penobscot version from an exhibit in the Penobscot Nation Museum on Indian Island and confirmed by its curator, James Neptune (personal communication, 2015), Gluskabe created the first humans from the mud of the banks of the Penobscot River. While widely stated on the internet, I could find no written source for this story, though it is widely quoted by Penobscot people with whom I spoke.

In a version told by Emanuel *Nàgùgwes* Metallic, Mi'kmaq of Listuguj, Nova Scotia (Metallic 2015), a long time ago, the Earth was a ball of water. Gluskap and his cousin, Malsum, were sent to the earth in a stone canoe. This version awakens Parkhill's (Parkhill 1992) criticism of Leland, who appears to have invented Malsum as a character in the Wabanaki pantheon, and then this character having taken shape as being evil. Parkhill uses this as an example of how non-aboriginal people influence and direct the course of aboriginal thought. In his critique, the 19th century anthropologist Charles Godfrey Leland made Malsum into a wolf, which is not a negative image in Wabanaki culture, but is in parts of Europe. However, in this version Gluskape is created off world and enters the earth fully formed. This is shared among multiple versions. The Canoe lands and turns into Cape Breton Island. Glooscap created all the animals and birds from the dirt. Many were much larger than they are today. Beaver was the size of a bear. Gluskap's evil brother created the badger, who is deceitful. In this version as in Leland's story, Gluskap eventually kills Malsum. In this version, Glooscap creates human beings:

Things continued to happen, like Glooscap's creation of human beings. It was from four arrows he shot at four different white ash trees that emerged the Passamaquoddy, Penobscot, Maliseet, and the Mi'kmaq peoples. He then set about teaching them what to eat and what to gather. Eventually, Glooscap had to leave. Before leaving towards the setting sun, he gathered and told them they could find him if they searched hard enough.

This version in which people are made from Glooscap shooting arrows into white ash trees also appears in the Wabanaki poet Savageau (Savageau, 1992) who writes, "His heart was green and growing / as if he'd lived for centuries, / an old forest man / rooted in the rocky soil / now called new England, / as if Gluskabe's arrow / had just pierced the bark / and turned it

into human skin (p. 56). Savageau comes from both Abenaki and European heritage, as is common in Northern New England, her writing arising from her heritage and ongoing dialogue with other Wabanaki women and writers. Her stories came from her father and grandmother (Lacombe, 2015). Her contemporary Wabanaki poet, Mihku Paul (Paul, 2012), has similar detail: “Trees, giants straight and submime in / haughty strength, ancient as Koluscap himself, / our leader and teacher. / We are all kin, made in his image / Born of the arrow that pierced the tree (p. 1).” Paul is tied through birth and marriage to the St. John and the Penobscot Rivers of New Brunswick and Maine, her stories coming through her mother’s lineage (Lacombe, 2015).

Roseann Clark (Clarke, 2015) tells another version that includes Malsum and Glooscap being in their mother’s womb together and Malsum being so impatient to get into the world that he bursts forth from the side of their mother, killing her. Glooscap and Malsum continue to fight, but eventually Malsum asks Glooscap what could kill him and he incorrectly answers down feathers. Glooscap asks Malsum, and he answers, cattails. Malsum tries to kill Glooscap with the down feathers, and only stuns him, whereupon, Glooscap touches Malsum with the cattails and kills him.

A related Maliseet version of this story comes from Viola Solomon (Soloman, 1962), who writes:

Well, this is Viola Solomon trying to tell the story of Kluskap, Lord of the Indians. And this Kluskap had a twin brother. . . .Before they were born they even had a consultation about it. He [Kluskap?] asked his brother, “Which way would you want to be born?”

So Malsumsa said (that’s the Wolverine), “I’d like to be born—burst right into life, even right through there to life.” That’s the way he wanted to be born. So he asked Kluskap, “Well, how do you want to be born?”

He says, “I don’t want to be born any different than the rest of the people.”

Well, so it come to pass they were born, and he [Kluskap] was born just like any other human being; and then this Malsumsa, his mother died giving birth [to him]. Malsumsa’s the Indian Devil. . . . That’s the Wolverine.

So anyway they brought themselves up. And they was always together, `til one day they tried their strength against each other which one would have more power than the other, although they were twins. Well, he [Malsumsa] said, “How would a person kill you anyway? How could a person kill you?”

Well he said (that’s how he got his name), this Kluskap told his brother a lie. He said, “All you gotta do is to go and pluck a feather out of this white owl’s tail and hit me over the head with it when I’m sleeping. I’ll never know what struck me.”

Well anyway they went on a hunting trip. And soon they’d be pulling up trees right by the roots, you know, and they seemed to think that Kluskap was stronger. Anything they tried Kluskap was always the strongest of the two. Malsumsa didn’t like it; he envied his brother all the time. Well one day he seen a white owl while Kluskap was sleeping. So he went and plucked a feather out of this white owl’s tail. It was in the night when the moon was shining bright. He could see that white owl just as plain. So he caught this owl and hit his brother with this tail feather.

My God, Kluskap just woke up! [It] just woke him up. “You found out that I was just telling you a lie. You just struck me hard enough to make me mad,” he said. “Now, because you are so wicked I shall turn you into a beaver.”

[Malsumsa he said], “If you turn me into a beaver I’ll always eat up your woods.”

Well [Kluskap] he said, “I shall drive you away from this territory.” He picked up three rocks.

This beaver went and jumped in the river, flapped his tail and said, “Try and hit me [if] you can.”

Kluskap picked up a rock and tried to hit him, but this beaver was too smart, too fast for him. He went up the St. John River, and the first hiding place he came to was going up on that Pokiok Falls. That’s where he struck the first rock landed. So this Beaver thought that was too much for him. So he went further up the St. John River, and right now you can see them rocks. I mean you can’t now; since they built the dam [i.e. at Beechwood] they’re all under water. There’s two big rocks. [Speaking to her daughter, Mrs. Black]: You’ve seen them, huh? [Mrs. Black: Uhmhm]. They call [them] “Tobique Rocks.” There’s one about three

miles below Perth and one right here at the mouth of Tobique. Well, a little below. [Aside:] Oh, right here! I thought I was over in the point! [i.e. at the reservation]. And one at the Grand Falls. That's what made the falls

The Number 7

As Klose-kur-beh travels to the north we encounter the sacred number 7. He travels toward a high mountain, seven rainbows tall. As he walked up the mountain, his breath left him and he collapsed seven times, and each time, the wind of the heavens blew upon him and restored strength to his body. Seven times he reached his hand toward the seven rainbows and found the strength to continue to climb to the top of the mountain. Klose-kur-beh is lifted by a cloud and carried toward the rising sun. He passes it and enters the darkness and the voice of the "Great Being" tells him that the "Great Being" will be with him even in the darkness. The idea of the four directions appears again as the "Great Being" tells Klose-kur-beh that he will send the wind from each of these directions and that the wind shall obey the "Great Being" and that the "Great Being" will command the sun to rise. He tells Klose-kur-beh to arise with the sun and to walk toward it until it sets 70 times 7 times. He tells Klose-kur-beh that he will come for 70 times 7 nights to teach Klose-kur-beh his duties. This is the first time I have seen the number 70 enter into a North American story. On each of the nights, seven words passed between them until the last seven days in which Klose-kur-beh was fed and clothed and shown how to find food and make clothing. Nicolai says that no seasons were mentioned in any of the stories until the final seven days arrived (p. 13).

In the first seven nights, the "Great Being" taught Klose-kur-beh that the world was all spiritual, that all things had a *living* spirit, and that all things that move are moved by the "Great Being" who has power over all. There is only one "Great Being."

In Nicolai's account, the first woman appeared to Klose-kur-beh on the first day after the 70 times 70 nights. She is called Nok-a-mi and appears as an old woman even though she was just created that very noontime. She was formed when the noon sun heated dew on a rock. The next day at noontime a young man appeared before Klose-kur-beh. The young man relates that he was formed when the wind blew across the tops of the waves of the ocean creating foam that became him when warmed by the noon-time sun. Klose-kur-beh call fish to come forth to feed the young man and selects the red fish. He tells the white fish and the

black fish to return to the sea and come when called by men of their color. This seems to be a detail inserted post-colonization, when the people would have become aware of the possible variations in the amounts of melatonin present in skin. The next day, when the sun was highest, a young maiden appeared, whom Klose-kur-beh called Mother, or *Nee-gar-oose*. She came from the noontime sun warming the morning and evening dew on the leaf of a plant. She brought love to share with the people, many times seventy times seven. Here we see Klose-kur-beh turning to each of the four directions to give thanks for the appearance of the young maiden. Klose-kur-beh received guidance from the “Great Being” that man and woman would marry by the woman holding the man’s right hand in her left and bowing toward the sun for seven days in a row. Immediately after the seventh bowing, the man was to walk 70 times 7 steps toward the noon and take seven days to build a house made of sticks and leaves. On the seventh day, the woman was to gather tender branches from the forest to make a bed for them. The man and woman did this and after they had lived in the house for seven days, Klose-kur-beh came to give them further teachings, including his instructions that they should take claim to the land south of their home, while he would claim the land north of their home. He then says that he will come to them every seventh day to give further teachings, which also suggests a potential Christian influence, since I am not aware of other stories in which one day is honored over other days as with the Christian “Sunday.” It makes sense that the Penobscot might adopt the idea of “Sun Day,” since they are the people of the dawn.

Klose-kur-beh tells the woman that she will bear seven sons and seven daughters and that their children will become the seven tribes which will populate the earth with many times seven people. He then gives instructions for how men should take mates to avoid weakening the generations, referring no doubt to what we now call the gene pool. Klose-kur-beh then reveals that the “Great Being” told him that he had made other men who would eventually come from the East – black men and white men. Was this prophecy or was it post-hoc alteration of the story to explain the appearance of people with minimal and maximal melatonin in their skin?

Modern Day Glooskap “sightings.”

Gousse writes that Glooskap has returned and has defended the people using the story of Glooskap’s encounter with a monster who is blocking the water from coming down the

Penobscot River (Gousse, 2013). In a brief synopsis of this story, a tribe on the River becomes concerned because the river has dried up, leaving only pools of yellow, fetid water. The people send a warrior upstream to learn what has happened where he encounters a huge monster who has blocked the river and defies all attempts at persuading him to release the water. The village calls upon Glooskap who wades upstream, confronts the monster, and subdues it, allowing the water to return and the fish to nourish the village.

Gousse writes:

The story of Gluskabe and the Water Monster is perhaps more pertinent today than ever before. The legend teaches the importance of balance in nature and honors the Wabanaki cultural hero and serves as an allegory for the contemporary struggles of the present-day descendants of the original storytellers who first breathed life into the heroic Gluskabe legend. The story of Gluskabe and the Water Monster addresses the consequences suffered by a society when its most precious resource and source of identity is jeopardized. This story also illustrates tribal sovereignty through collective decision-making and teaches the sanctity and importance of protecting tribal resources. Today, the story of Gluskabe and the Water Monster is more relevant than ever before because it came true.

Gousse raises the very important point that Gluskabe is alive and well today, not just a legend, not just a quaint story. Gluskabe is behind the cleaning of the Penobscot River. He describes how the State of Maine enacted in 1980 the Maine Indian Claims Settlement Act (MICSA) to provide title to the tribes for large expanses of land (Rolde, 2004), leading to litigation that is still ongoing over the river's control.

Another area of contemporary practice for Gluskape is in the dialogue that is two-eyed seeing. Mi'kmaw Elder, Albert Marshall, of Eskasoni Reserve in Nova Scotia, invented the term around 2003 to describe a unique collaboration that began at Unama'ki-Cape Breton University in Sidney, Nova Scotia, of indigenous knowledge keepers and academically trained scientists. Two-eyed seeing describes the process of looking from the perspective of traditional Indigenous knowledge and epistemology, while simultaneously also looking from academic scientific knowledge and epistemology. In the history of contact between indigenous people and non-indigenous civilizations, it is radical and new to believe that indigenous people have anything to offer, so the concept of two-eyed seeing is very exciting.

Two-eyed seeing is a translation of the word *Etuaptmumk* in the Mi'kmaw language and has been spreading across Canada and has even been integrated into Canada's Institute for Health Research's policies about how research should be conducted in aboriginal health. Another word, *Netukulimk*, refers to the key concept of key concepts of co-existence, interrelatedness, interconnectedness, and community spirit. Shaw (Shaw, 2010) tells the Mi'qmaq story of Gluskape wanting to take a bath. He orders beaver to make a dam across the bay so that he will have enough water for a good bath (he can be quite tall in Nova Scotia!). Beaver complies and proudly constructs an engineering miracle. Whale becomes angry because the water is not flowing like it had. "Why has the water stopped flowing?" cried Whale. Kluscap heard whale and had second thoughts about his bathtub. He certainly didn't want to upset whale, so he asked Beaver to take apart the dam that he had so carefully built. Beaver was reticent to do so, because he was so proud of his work and didn't want it to be dismantled. Whale grew impatient and took matters into his own hands (fins). Whale broke the dam with a might slap of his tail causing the water to surge back and forth with great force. The force was so great that the water continues to flow back and forth even yet to this day. Shaw, et al. show that a barrier at the mouth of Minas Basin in the Bay of Fundy at the Minas Passage rapidly dissipated about 3400 years ago, causing a near instantaneous tidal expansion with reduced water temperature, and increased tidal currents and turbidity, changing the form of the inner estuary from lagoonal mesotidal to macrotidal. They show how aboriginal people observed this rapid environmental change and preserved an oral record of it for 3400 years. In this way, Gluskape continues to make his presence known in the here and now through his presence in the stories that explain how things came to be the way they are. The aboriginal stories offer fresh insight to contemporary scientists for clues about how to explain natural phenomena.

Gluskabe's Character

Gluskabe appears to need ongoing supervision and instruction. The wisdom he receives from the Great Spirit is not enough. For example, Grandmother Woodchuck [Nok-a-mi] must teach him the importance of conserving game so that future generations will have food. She also teaches him how to build canoes and other tools, how to hunt, fish, gather food, and perform other activities necessary to survival (MacDougall, 2004). Gluskabe is not perfect. He can be selfish. In Burlington, Vermont, in December, 1992, at the University of Vermont, I heard Joseph Bruchac tell a story which is part of a genre of stories in which Gluskabe is

revealed to sometimes think of his selfish desires and not the greater good. In a short summary of this story, Glooskap sees some ducks. Bruchac added that they were on Lake Champlain, in Mallett's Bay. Gluskabe wanted to go duck hunting, but the wind was so strong, that as hard as he paddled his canoe, he made no headway and could not reach the ducks. He decided to do something about the wind and asked Grandmother Woodchuck about the source of wind. She suspected he was up to no good and cautioned him not to change the nature of things, but he ignored her. He wore her down until she told him that the wind was made by a large eagle who lives on the top of the tallest mountain. In Bruchac's version, this was Mt. Mansfield. In Maine, I've heard it told as Mount Katahdin. Gluskabe trudged up the mountain carrying a blanket, facing the full force of the wind which blew away all his hair and his clothes. He convinced the wind-eagle that he had found a better place for it to sit and wrapped it into the blanket so that he could carry it to the better perch. Instead, he stuffed it into a hole in the rocks and left. However, problems ensued. The lack of wind caused the ducks to leave. The insects multiplied and bit everyone with great enthusiasm. The land began to stink. Grandmother Woodchuck demanded Gluskabe tell her what he did. He revealed his deed and she told him to fix it. He marched back up the mountain, pulled the eagle out of the hole and took it back to its original perch. The eagle told him how a naked, bald man stuffed it into a hole, and how glad it was to be rescued. Things returned to normal. This story, and the above story about the Beaver dam, show that Gluskabe can be selfish and self-serving. However, he is able to realize what he has done wrong (under the tutelage of Grandmother Woodchuck or because he sees how upset Whale has become), and he corrects his mistakes to make things right again. This makes him more than just a trickster. He models a kind of behavior in which we learn that it is acceptable to make a mistake and then make an effort to correct it. We learn that selfish acts often fail, requiring extra effort to make things right again. However, Gluskabe never commits crimes or chases women. His tricks are not malicious. He also shrinks animals to size who are too big and changes the appearance of things when needed.

Leland (1884) says that Gluskabe would help people attain their desires if they could find him, before he left (various stories give different locations for where he went) the area. In one story, two young men sought Gluskabe and found him on a great island (p. 82-91) where he dwelt with Bear and Marten. One young man wanted to become a *Mikumwess*, or Little Person, because he wanted the special powers and abilities that *Mikumwess* have. The other young man wanted to marry a beautiful daughter of a chief who required such deeds from her

suitors that all the previous young men had died trying to qualify for his permission. First Gluskabe plays what is called “a merry trick” on the young man by covering him with filth and shaming him, but then he washes off the filth and gives the young man the power to become *Mikumwess*. Gluskabe then lends the two young men his canoe, which he says no mortal had ever brought back to him, but he was loaning them his canoe because he trusted them to bring it back. Gluskabe tells the young man who had become *Mikumwess* to go with the young man and assist him to accomplish the tasks to win the bride. The *Mikumwess*-man did just this, helping the suitor to accomplish four impossible tasks and then helped him to overcome sorcery induced obstacles to return with his bride, finally arriving to where Gluskabe was, who then acknowledged his role in assisting the two men overcome their obstacles, and promises to help again if people call upon him. Leland completes the story with Gluskabe saying:

Then Glooskap, laughing, let them know that in all they had experienced he had been busy, and that in all their triumphs he had had a hand. And to the *Mikumwess* he said, "Go now thy ways, thou and these, and ever lead happy lives: thou amid the Elfin, they among mankind. And be sure of this, that if danger or trouble should come to you, you have but to think of me, and verily aid will come. So they rose and went to their wigwams (p. 91).

Leland notes that Gluskabe appears in some stories as Spring, as the one who melts the ice of winter, as the one who prevails over the frozen streams and the icebergs. Leland emphasizes that Gluskabe can be considered “active and creative Nature itself, directing and sporting with the warring elements.” He describes Gluskabe more as a practical joker than a trickster. However, Leland also points to the temper and anger that Gluskabe could manifest, as for example when he turns a witch who tries to seduce him into a ferocious fish with a top fin. Leland says, “Now of sinful men, evil beasts, foul sorcerers, witches, and giants, there were in those days many who sought to do great harm to Glooskap; but of them all there did not escape any; verily, no, not one (p. 93).” Leland also pointed out that Gluskabe did not tolerate people who lied to him or did not do exactly what he told them to do: “The good Glooskap liked it not that when he had told anyone evenly and plainly what to do, that man should then act otherwise, or double with him (p. 94).” Leland tells the story of a young man who makes the treacherous journey to the place where Gluskabe dwells and asks for a medicine to cure all ills. Gluskabe gives it to him in a package and tells him not to open the

package until he reaches home. The young man mistrusts Gluskabe and opens the package early whereupon the contents spill out onto the ground like water and evaporate as a mist.

Gluskabe's practical joking can take an ironic twist when people ask him for frivolous or selfish gifts. Leland tells the story of three young men coming to Gluskabe to ask for gifts. One asks to be taller than anyone else in the land. Another asks to be allowed to remain in this place of beauty for his entire life. The third asks to live to old age in good health. Gluskabe transforms them into three trees, pines or cedars, depending upon the version of the story. In contrast, three other men come to Gluskabe and behave properly and respectfully and ask for gifts that would benefit more than just themselves. Gluskabe gives them these gifts. They follow his instructions now to open their packages until they reach home and experience the power of the gifts. Leland ends this tale with:

Then each of them, having opened his box, found therein an unguent, rich and fragrant, and with this they rubbed their bodies completely. And they were ever after so fragrant from the divine anointing that all sought to be near them. Happy were they who could but sniff at the blessed smell which came from them.

Now he who had been despised for his deformity and weakness and meanness became beautiful and strong and stately as a pine-tree. There was no man in all the land so graceful or of such good behavior.

And he who had desired abundance had it, in all fullness, his wish. For the moose and caribou came to him in the forest, the fish leaped into his nets, all men gave unto him, and he gave unto all freely, to the end.

And he that had been wicked and of evil mind, hasty and cruel, became meek and patient, good and gentle, and he made others like himself. And he had his reward, for there was a blessing upon him as upon all those who had wished wisely even unto the end of their days (pp 101-102).

The Christian influences upon Wabanaki stories may relate to the Reverend Silas Rand (Rand, 2004), who wrote many stories in the 19th century, with a Christian twist. Annette Kolodny annotates Nicolai's book to expose the similarities between Gluskabe and Biblical stories (Nicolai 1893). She says that, in the Christian creation myth in Genesis, God created the first man (Adam). She says that the Bible's Adam and the Penobscots' Gluskabe—both considered the first human man within their respective traditions—were both created out of

the dust of the Earth, and both were formed by the Creator *after* the animals, fish, and fowl. Not all stories support this. Kolodny draws attention to the similarity between Nicolar’s description of Gluskabe’s prophesy and the Christian prophecy of about bottomless pits from Revelations in the Bible (113).

Gluskabe’s Teachings

Nicolar says, “Three things ... are held more sacred than all others (102).” These are: (1) believing and trusting “the power of the Great Spirit [Kci-Niwesk?; Creator or creative force of all Life],” (2) occupying the land which the people were given, and (3) honoring the gifts of “their first mother [Nee-gar-oose; Mother Earth; sustaining force of all Life, especially derived from plants]” and loving and honoring her (1893: 102). These teachings become the core around which the Gluskabe stories are organized.

Epistemicide

Rebecca Sockbeson uses Gluskabe as evidence of Wabanaki resistance to what she calls epistemicide, or the attempt to destroy indigenous epistemologies and knowledge by colonials (Sockbeson, 2017), paralleling the proposal that keeping and telling the traditional stories was a means for maintaining culture and resilience (Kucich, 2012). She writes, “Gluskabe’s encounters with epistemicide are those very places wherein I identify or bring to light the ongoing vitality of Indigenous epistemology, which I identify as Red Hope.” Gluskabe has the potential to become a very modern, powerful hero, who can offer indigenous people hope against the non-indigenous influences. Today, that is so important. As we look at the Republican Party and Donald Trump, we see them exemplifying values that are decidedly non-aboriginal. The values that Gluskabe teaches are decidedly non-Republican. They relate to taking care of the weak, serving the community, putting others ahead of self, practicing compassion and kindness. The Republican/Trump agenda appears to be advancing the practice of greed and the individual to the detriment of the community. Gluskabe and his teachings can emerge as an antidote

Gluskape and Narrative

Gluskape stories contain narratives with agents and goals. Boyd says that animals needed to be rapidly aware of other agents as potentially urgent threats or opportunities (Boyd, 2001). Some agents capture our attention better than others, and Gluskape is one of them. Boyd discusses Baron-Cohen's (Baron-Cohen, 1995) observation that human children have an "innate fascination with animal kinds and names, out of all proportion, in modern urban life, to the likelihood of their encountering aardvarks or zebras (p. 205)." Traditional stories involving Gluskape certainly play to this. Boyd writes:

Precisely because we are primed so early, phylogenetically and ontogenetically, to attend to the stark differences between animal kinds, these differences have been an immemorial analogue for the differences in powers and personalities within the human that are so important for our social life...If some agents catch the attention more than others, that applies within as well as beyond the human. We take more notice of the larger than the smaller, of higher status or greater powers rather than lesser, of the unusually helpful or harmful, of those with features strikingly different from the normal range (p. 205-206).

We interpret each other's and animals' behavior through what is called Theory of Mind, which is an innate psychology of belief, desire, and intention. We need to know what others believe, want, and intend to do. This helps us differentiate friend from foe and safety from danger. Gluskape stories exercise our theory of mind brains. It helps that Gluskape matches the classic form of hero for whom we feel sympathy. Humans demonstrate an innate caring for those heroes who display might or merit (Gopnik & Meltzoff, 1997). We are wired to support them in their quests. This support of likeable beings pursuing laudatory purposes stimulates moral emotions, which is a key ingredient of narrative art (Carroll, 1998). While the telling of Gluskape stories within the community served these important purposes of arousing our moral sensitivities and developing our theory of mind capacity, their telling to outsiders served to communicate to the European invaders that Wabanaki people had minds, emotions, and feelings, also. Gluskape stories appeal to the common ethical concerns of all human beings, to the dialectics between selfishness and altruity, between the individual and the collective, between independence and inter-dependence, and between support for the weak and the strong (Boyd, 2001).

Conclusions

I propose that personified male creators in Wabanaki stories come from Christian influences. They are not present in the preponderance of stories; primarily only in Nicolar's. I also suggest that comments about white people and black people were late additions to the stories, since only Spotted Elk's and Nicolar's versions contain them and it would have been a convenient addition to counteract the widespread prejudice of the time against indigenous North Americans. I believe that the pre-European Wabanaki cosmology was consistent with other Algonquin and North American tribes in not having a personified male creator. In the contemporary revitalization of Wabanaki culture, it may be important to remove personified male creators, to restore the balance between male and female inherent in Wabanaki culture. In some renditions, man was created first; in others, woman. In some, one of each; in others, seven of each. The stories of human creation which contain elements of spontaneous emergence, reflect what we know about biology, and reflect indigenous knowledge that nature can generate unanticipated results in its workings. Most of the stories have man and woman emerging from elements of nature. Even in the story in which an arrow is fired into four trees, it is the trees who become humans, keeping our sense of relatedness intact with the "one-leggeds." In removing Gluskape from the role of Creator, which he carried in Spotted Elk's story, he becomes more like similar "elder brother" figures across the Algonquin world. These include Nanabozho, Wiskiadjak, and, in the Lakota world, Stone Boy. Perhaps cultures need mediating figures between a disembodied, more distant creator and this Earth. Perhaps Jesus played that role for early Christianity, before he was deified. Cultures often have both male and female figures. Besides Gluskape, the Wabanaki have First Mother, First Father, and Grandmother Woodchuck. The Lakota have Wazi, the wise man, wakanka, the wise woman, and Wohpe, the White Buffalo Calf Woman. Commonly eagles bring messages from the spirit world, which happens in some of the Gluskape stories as well as Lakota stories. While perhaps not relevant to folklore, the selection of stories to carry forward is highly relevant to the future of the culture. Culling undesirable European influences is akin to Gluskape's or Coyote's job of removing creatures and monsters that could be harmful to the people. Finally, I would propose to eliminate Malsum, the evil twin, as a wolf. Wolves deserve more respect and receive it in most of North America. Whether or not Gluskape had a twin is a matter of debate. Some versions make this figure a cousin and others just an annoying spirit. Regional differences do exist. For example, the Mi'qmaq place the site of

creation at the current site of Halifax, Nova Scotia, and have Gluskape sleeping between Cape Breton Island and Prince Edward's Island. Maine Wabanaki are more likely to envision Gluskape as sleeping near or inside Mount Katahdin. However, other stories exist in which he has returned to Spirit World, and will return from there when needed. Taken as a whole, Gluskape presents a series of strategies for how to be in the world. These strategies include humor, protection, compassion, sometimes trickery, courage, the maintenance of a sense of justice, intelligence, Perhaps, Gluskape is a model for good behavior. After all when he makes mistakes, as when he stuffed the wind eagle into a hole in the mountain, he returned and made it right. He cleans up after himself, unlike some Tricksters.

Notes

The spelling of Gluskape changes story by story, reflecting how the local dialects are written in English. Variations include Gluscabe, Klooscap, Kluskabe, Glooscap, and more.

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Chapter 6 - The Impact of Xenophobia on the Bilateral Relations of Nigeria and South Africa

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Chapter Highlights

- Xenophobia is recognized as a prevailing social issue in Africa, particularly in South Africa, with Nigerians facing widespread violence, maltreatment, and isolation abroad, prompting concerns about the protection of their fundamental rights.
- The paper employs the utilitarianism theory and frustration-aggression theory as frameworks to analyze and elucidate the profound impact of xenophobia on Nigerians, providing a theoretical understanding of the motivations driving xenophobic actions in South Africa.
- Exploring the susceptibility of Nigerians to human rights violations due to xenophobia, the paper delves into the legal ramifications of these violations, emphasizing the uncertainty surrounding their effects on the Nigerian people and the broader bilateral relations between Nigeria and South Africa.
- The paper reveals a significant deterioration in the bilateral relations between Nigeria and South Africa over the years, attributing this decline to the persistent issue of xenophobia, leading to strained political and diplomatic ties between the two nations.
- The paper recommends that the Nigerian government takes decisive and purposeful actions to protect its citizens in future bilateral relations with South Africa, recognizing the urgent need to counteract the detrimental impact of xenophobia on Nigerians and address the strained relations between the two countries.

Introduction

Over the years, there have been a dramatic increase in conflicts among African nations as a result of rapid urbanization. Despite ½ of their population consisting of youths under 18 years of age, population rise in these African countries do not match their economic capability thus, the economic decline in African states today. In the last fifteen years, governmental support for housing, hospitals, urban social services, socio-economic education and more have diminished significantly. These circumstances alone are enough to incite major violence and instability in African cities (Crush, Penaleton & Wade, 2004).

Xenophobia refers to the fear or dread for whatever is foreign or alien. It consists of psychological practices that express emotions of hatred for ideologies or people that are different from one's immediate culture (Steinbauer, 2019). Xenophobia continues to grow a lot of rife in Africa. In accordance with worldwide media reports, prejudice against foreigners, notably fellow Africans is on the rise in Africa. As a result of this, there is an unsettled nature in Nigeria-South Africa relations (Chidozie, 2013). Crush (2008) segregation was in support of the fact that principle of being "non-native" seem to be the order of the day in the African continent since independence (and this was structured throughout colonialism). Limited notions of citizenship have continued in Africa for over two centuries and xenophobia is among the most recent attribute of this practice (S.A.M.P, 2004). South Africa is an African country located at the south most region of the continent. It lies between the major cities of Lagos in Nigeria and Cairo in Egypt also, 6,000 (10,000km) away from most parts of Europe, North America and Eastern Asia where most of South Africa's business allies are situated. The country consists of three capital cities which are: Pretoria the Executive capital, Cape Town the Legislative capital, and Bloemfontein the Judicial capital. Johannesburg is the heart of the country as it is the commercial city of South Africa. It is popular for its natural beauty, topology and diversity in culture. Since 1994, it has been regarded as one of Africa's most visited places. (SouthAfrica Visa, 2022).

According to the South Africa Migration Project report of 2004, the A.N.C administration started nursing formidable and comprehensive nation-building projects in efforts to overcome recent variations and develop new kind of social cohesion. One unexpected consequence of this initiative has been the rise in maltreatment of foreigners. Various forms of aggression towards foreign nationals and African refugees have been on the increase. A xenophobe in

South Africa sees the foreigner as one trespassing his or her ecological and socio-economic area. As a result, he/she displays attitude of concern against foreigners who are having a share of the scarce or restricted resources available. The trespasser is seen as a threat and viewed with disdain and suspicion. This mentality have created a hostile environment for foreigners migrating into South Africa especially Nigerians (Harrison, 2022). The repercussion for this over the years, is a challenging diplomatic relationship government of Nigeria and South- Africa.

Given this context, the paper investigates the impact of xenophobia on the Nigeria- South African relationship. The paper is organized into five sections. The second section following the first which is the introduction, provides a historical review of Nigerian-South African ties. The third section is a broad look of literature on xenophobia in South Africa. The fourth section specifically addresses the impact of xenophobia on the bilateral relations between Nigeria and South Africa. The fifth section is its conclusive segment with proffered recommendations which will improve bilateral relations between the two countries in the long run

The Concept of Xenophobia

The concept of xenophobia is relatively new. It was originally used in Anatole France's novel "Monsieur Bergeret a Paris 1901". The French internal political conflict that arose from the Dreyfus rehabilitation as well as the high strain of nationalism growing at that time created the political and social background for xenophobia (Villard, 1984). It was first mention in the French dictionary, the Nouveau Larousse illustre in 1906 (Wicker, 2001). Xenophobia's reality of being able to divide the world in to certain group, race, nation, ethnic group, and culture gives it a political and social comprehension. This kind of notion stimulates self-centeredness which is the framework in which xenophobia is conceived, promoted and eventually disseminated.

Wicker (2001) opined that building a relation with a stranger cannot be fully satisfying from the beginning. Time, as a factor will tell whether such relationship will be a long mutually beneficial relationship or a brief relationship. Because of this, strangers are seen with complexity. He also emphasized that only pre-existing racist, ethnic, religious, cultural or national preconception can eventually build up a xenophobic mentality. Because, the

emotions coherent in xenophobia which are fear and hatred are attributes that are subjective in nature. Xenophobia is a collective response that present itself in the form of discrimination (Wicker, 2001).

In countries with little resources, newcomers, in this case, foreigners are seen as competitors for scarce resources, jobs and social services (housing, education, welfare). As a result, an atmosphere ripe for xenophobic occurrences is created. Nationalists begin to demand for stronger security against foreigners (Wicker, 2001). Globalization has also promoted xenophobia in a way or the other. The rise of internationalization and free markets (goods, services and labor) have spiked competition among countries both internally and externally and because of this competition and rivalry, states suffer from strained relations. Such is the Xenophobia against Nigerians in South Africa. The direct rivalry with migrants for public service amongst others increases the breeding ground for xenophobic views (Wrench & Solomons, 1993). Although, it has been proven that racial violence does not have to be geared towards a large group of immigrants. Social specifications such as strong political organization are crucial mechanisms for the creation of xenophobia (Wrench & Solomons, 1993).

The Concept of Bilateral Relations

From the topic of conflict, war, peace to international alliances, regional integration and foreign policy of sovereign states, bilateral relations have always been topic or interest amongst scholars and students of international relations. Bilateral relations is one of the oldest tools of diplomacy. All the way to ancient eras when kingdoms established mutual forms of relation with one another. It covers the scope of relations between two sovereign entities in international relations (Kishan, 2018). The rise of globalization and formative alliances in the last three decades, have spurred an increase in bilateral relations. This means that the international system is ever growing and as a result of global dialogues on a wide range of issues, nations form bilateral relations to have a concrete ground in the ever evolving international system (Kishan, 2018). The practice of bilateral relations have made foreign policies more open and an attraction of public opinion (Kishan, 2018).

When fall-outs occur between states, it is expected for the affected states to work together to resolve such differences. In events where these fall-outs become continuous, the bilateral

relation between such states usually wear out or eventually plummet due to irreconcilable differences between them. Bilateral relations have also been seen as a diplomatic mechanism and a tool for advancing various sectors of a nation's interests including the economic, political, social and cultural interests. The establishment of a bilateral relation between two states is subject to mutual acceptance of both countries and the stipulation of the relations is usually in accordance to the provision of the Vienna Convention on Diplomatic Relations (Kishan, 2018).

Theoretical Framework

The theories adopted in this paper are the utilitarianism theory also known as the moral theory. The second theory is the Frustration-Aggression Theory. Xenophobia and its impact on the bilateral relations between the two countries as they relate to the Utilitarianism theory for the provision of maximum amount of good for the greatest number in the society possible are described to be in line with the view adopted in the paper. The Frustration-Aggression theory is included in this paper in order to have an understanding and reasoning for xenophobia against foreigners by the people of South Africa. These two theories are utilized in this paper for a detailed understanding of the social phenomenon called xenophobia.

Utilitarianism Theory

The utilitarianism theory as propounded by Jeremy Bentham and older philosophers including; John Stuart Mill, Francis Hutcheson, David Hume, and Adam Smith is one of the most compelling and engaging approaches in history. There have been various dimensions to the understanding of utilitarianism. It is a belief that the ethically just action is that which generates the most good. According to the utilitarian point of view, the maximization of the general good should be of precedence. Which means, contemplating both that which is good for others and one's personal good (Driver, 2014). The consequentialist principle and the utility principle are the major principles of utilitarianism. Simply putting, its teleological aspect and its hedonic aspect. The consequentialist principle states, that rightness or wrongness of an action can only be determined by the goodness or the badness of the final result that comes out from such action. In this principle, the end justifies the means and not the other way around. Hedonistic utilitarianism simply condones pleasure and condemns pain. The principle emphasizes that pleasure is the only good and pain is the only evil (Louis,

2001).

Jeremy Bentham and John Stuart Mill, the philosophers behind classical utilitarianism connected the good with pleasure and emphasized on the need to maximize the good which involves ensuring the most benefit for the largest number of people as much as possible. Other mechanisms of classical utilitarianism are; impartiality and agent neutrality. This ultimately means, everyone's satisfaction is equal. When good is being optimized, it is the good regarded without impartiality. Thus, my good is no more valuable than anyone else's good (Driver, 2014). Jeremy Bentham focused on the need to identify and understand individual interests before speaking of the interests of the community. When something tends to add to the overall joy of an individual or conversely, lessen their miseries, it is said to promote such person's interest (Bentham, 1781). He further propounded that in measuring a government, it should be mandated by the principle of utility when the government's tendency to increase the happiness of the community outweighs its tendency to diminish it (Bentham, 1781). All of these principles of the utilitarianism theory can be linked to the strong need to establish a more mutually beneficial as well as an optimistic bilateral relationship between Nigeria and South Africa.

As identified earlier, xenophobia is the dread for something or someone foreign. A xenophobic attack is that which is geared towards foreigners or immigrants in a location. The crucial dilemma here is how can we ascertain the ethical morality of such activities? Another concern is how to identify the standard to distinguish that which is right or wrong? For, Bentham, the yardstick for all these is the increased happiness and satisfaction of majority of the people as well as the reduction of their pain and discomfort. In this paper, Bentham's view on the moral rightness and wrongness of an action will be related to the xenophobic atrocities against Nigerians in South Africa and how a more optimistic bilateral relation between both countries can give a clearer sense of direction on the future of relations between the nations.

In the globalizing world today, effective bilateral relation is important in advancing the national as well as external interests of a country beyond its boarder. Through a strong bilateral relationship between nations, solidified blocs in the international system and politics are built with each ally having one another's back whenever the need be. Nigerians in South Africa being attacked by their fellow Africans have not only put a dent on the strong bilateral

relations built between the two nations over the years, it has also put in question, the morality of the South African people.

The utilitarianism theory attempt to address how xenophobia have strained bilateral relations between Nigeria and South Africa due to the immoral nature of xenophobia. It is important to understand the theory's advocacy for the promotion of individual satisfaction as the only thing humans should seek and the only thing worthwhile for its purpose. The theory further tried to help humans in making choices that produce maximum satisfaction and therefore, devised a hedonistic calculus that is designed to serve as a guideline in the search for individual satisfaction and pleasure at the end of the day (Sotonye & Tamunopubo, 2020).

From the perspective of how this atrocities have impacted bilateral relation between the two states using the utilitarianism point of view, the principles of the theory are opposed to these xenophobic practices even if it is of satisfaction to most of South African nationals, it is a very unethical vice which will do nothing but hurt bilateral relations between the two states. The theory promoted the government creating an optimistic bilateral relations where decisions concluded on will foster the protection and happiness of the nationals of both countries residing in the other, which is the principle that one should maximize the general good which involves contemplating both the good of others and one's good (Driver, 2014) . It is against all principles of utilitarianism if what is good for one person (South Africa) causes pain for others (Nigerians) in the society.

Frustration-Aggression Theory

The second theory to further explain the rationale behind xenophobic attacks on Nigerians in South Africa is the frustration-aggression theory. John Dollard, Leonard Doob, Neal Miller, O.H. Mowrer, and Robert Sears, a group of Yale University psychologists discovered the theory of frustration-aggression in a detailed essay called Frustration and Aggression (1939). Till date, this theory is the only theory that gives an explanation of aggressive behavior. Frustration is bound to occur when the pattern of behavior or way of life of an individual is being made difficult more than it should be. In a situation where no preferred substitution is made to make things easier, the frustration of such individual will eventually lead to an aggressive reaction (Dollard, 1939). The frustration-aggression theory can be traced back to the works of Dollard and his colleagues in 1939. The theory explains that aggression is the reaction as a result of one form of frustration or the other. The greater the frustration, the

greater the quality of aggression against the source of frustration.

It can be seen from the principle of the frustration-aggression theory that Nigerians are victims of South Africans frustration in South Africa. The nationals have a grudge against Nigerians with claims that Nigerians are the reason for their hardships in South Africa which why they maltreat Nigerians who migrate into their country. South Africans have also bitterly complained of Nigerians contributing to drug trafficking practices in their communities along with other social vices. South Africans view Nigerians as the source of their frustration. With this theory, the more socio-economic hardships experienced by South Africans while foreigners continue to benefit from their country, the more aggressive reactions towards foreigners in their land until these foreigners are forced to leave.

The impact of xenophobia towards Nigerians in South Africa cannot be overemphasized. Repetitions of these attacks have strained and worsen bilateral relations between both countries politically, economically and socially. The consideration of the rationale behind South African nationals' actions make the reason for these attacks more understandable but that does not make xenophobic attacks less wrong than they are. The materialization of the utilitarianism theory can serve as a silver lining with the two nations establishing a holistic bilateral relation including the consideration of the effects of xenophobia on both parties and how utilitarianism principle of maximum good can become a reality for Nigeria and South Africa without leaving the nationals of one country at the mercy of the other.

Bilateral Relations between Nigeria and South Africa

Nigeria's foreign policy has remained centered on Africa over the years. The principle of its foreign policy motivated Nigeria to devote herself to the freedom of the African continent from colonization including the abolition of racism and abuse of power since her independence. On March 21, 1960, the Shapeville massacre occurred and it provided Nigeria the opportunity to display her afrocentric and anti-colonial foreign policy. During this occurrence, blacks in South Africa were being abused and assaulted by white South African police an act of racial inequality. The events led to the death of 72 blacks and many left injured. This was the beginning of Nigeria and South Africa's diplomatic relations. (Onuoha, 2008).

Be that as it may, the Nigerian people and government's bond with that of the South Africans during the apartheid rule did not immediately mean the two countries have a tight intergovernmental relationship after 1994.

Nelson Mandela, notable Nobel Prize winner was the first black president of South Africa immediately after apartheid. He became a key actor on African and international affairs. Nigeria, during this era was being governed by successive military groups led by Gen. Ibrahim Babangida from 1985 to 1993 and Gen. Sani Abacha from 1993 to 1998. Prior to 1999, South Africa's relationship with Nigeria was sour. This was as a result of the military administration ruling Nigeria at the time and this was politically frightening to South Africa (Big-Alabo, Tamunopubo, Mac & Emmanuel, 2020).

Between 2000 and 2004, a more focused strategic cooperation was forged between Nigeria and South Africa but the relationship between the nations plummeted in 2004 when a Johannesburg radio announcer made a mockery of Chief Olusegun Obasanjo, (the Nigerian president at the time) who was in South Africa, for the inauguration of Thabo Mbeki of possibly having a cocaine in his suitcase (Games, 2013).

The diplomatic ties between Nigeria and South Africa have been strained for various reasons in recent years (Adekunle, 2012). This is the reason why Former President Goodluck Jonathan of Nigeria visited and gave a discourse to the South African joint parliament. The Presidential visit was motivated by the yellow fever certificate case of March 2nd, 2012 when 125 Nigerians (75 of whom were on a South African Airline and 50 were on Arik Airline) because of their failure to receive yellow fever vaccine were deported. Many saw this action as the pinnacle of ingratitude and insisted xenophobia by the South African government, deepening the strained relationship between the two states (Adekunle, 2012). The Nigerian government responded by sending back South Africa's first batch of visitors from the Murtala Mohammad International Airport, Lagos. Within two days, about 128 South Africans were deported. This was before the two countries came to an agreement.

Xenophobic Attacks on Nigerians in South Africa

In recent years, the rise in xenophobic attacks particularly against immigrants coming into South Africa has become a cause for concern. Nel (2005) described xenophobia as a

malefaction. This means, xenophobia is a form of extreme manifestation of preconception through violence against a group of people as a result of where they are from, ethnicity, background and so on. It is a form of hostile treatment of foreigners expressed through hatred, fear or general intolerance towards them (Evans & Newnham, 1998: 583).

The South African Migration Project states, that the country has perhaps the highest level of xenophobia globally, majority of which is aimed at African and black immigrants (Laher, 2009: 1). The nature of such behavior and attacks against foreigners puts in question the security of society and shows the extent of violence in South Africa (Choane, Shulika, & Mthombeni, 2011). According to Choane, Shulika, & Mthombeni (2011), there are three basic factors frequently placed as reasons for xenophobia; (a) Elements of interaction that connects to residents' exposure to strangers (b) Cultural traits such as nationalism and identification (c) Economic and material factors such as job prospects, available resources and the likes. Due to the subjugation black nationals experienced during the apartheid regime which drove most of the people to be intolerant and wary of outsiders, apartheid in South Africa resulted to the xenophobic mid-set seen today in the country (Harris, 2001: 70).

Solomon (2008: 3) and Matzopoulos, Corrigan, and Bowman (2009: 11) gave instances which include the March, 1990 xenophobic assault "Hlaphekani" where 300 Mozambican houses were burnt down by South African villagers. Furthermore, in 1993, nationals in Cape Town issued complaints that Namibians and Angolans were having access to homes and welfare while South Africans remained homeless. In 1994, conflict rose among South African locals, the Xhosa and Namibian fishermen. Residents claimed that Namibians were grasping their employment on fishing boats and working for half the pay. This led to the intrusion of Namibian homes by South Africans who confiscated all their belongings to signal that they do not belong to their community. The 1997 and 2006 Surveys conducted by the South African Migration Project shows that 25% of South Africans supported a complete ban of immigration in 1997 and 22% of the nationals wanted the government to return foreigners to their home countries. The 2006 survey further proves that immigrants are still not welcomed by South Africans and are viewed as threats to the socio-economic well-being of South Africa (All Africa, 2008). From the above, it is clear that xenophobia is a well-established phenomenon in the South African Society.

In 2008, Nigerians experienced their first xenophobic attack in South Africa with over

100,000 Nigerians displaced. This was not the last of such an attack. Consecutively in 2015, 2017, 2019, and 2020 Nigerians suffered the same fate in the hands of South Africans. The Nigerian government lost just about 137 nationals in South Africa between 2014 and 2016 (Ogbonnaya, Madueke, Ajah & Onyeke, 2017). The assumption that migrants from other African nations are the reason for South Africa's social and economic mishaps is the primary cause of the recent xenophobic wave in the country (Dahir, 2019). It is critical to note that in spite of the support Nigerian government rendered South Africa including the mandate to deduct funds from civil and public officials' paychecks for the promotion of the South African liberation movement, Nigerians without regard are now subject to xenophobic attacks in the hands of the same South Africans. A demonstration of little regard and inhumane treatment towards Nigeria and Nigerians (Ogbonnaya, Madueke, Ajah, & Onyeke, 2017). Nigerians seem to be on the most receiving end of these xenophobic attacks in South Africa. Over 60 Nigerian lives were lost in the 2017 attack and over the years, the response of the Nigerian government to these constant attacks seem to be almost unnoticed by the public and this response appears to be repeated over the years (Ogbonnaya, Madueke, Ajah, & Onyeke, 2017). The post- apartheid transition ideals that represents a new world era, especially the dedication to the importance of human rights and international peace seem to be side-tracked by the rapid rise of xenophobia in South Africa.

The United Nations Security Council was prompt to censure the xenophobic attack of April, 2015 in South Africa and so did the neighboring countries including Zimbabwe, Mozambique, and Malawi who also castigated and denounced the atrocities committed (Claassen, 2015). Taking a step further, Nigeria recalled its ambassadors from South Africa. The attack created a heightened tension between the two nations because, added to the fact that some have faulted the Nigerian government for not doing enough on its end, the Nigerian government insisted that the government of South Africa was being derelict to protect Nigerian nationals in South Africa who are the major targets of these attacks. The unpleasant outcome of these attacks have gravely strained the social and economic bilateral ties between the two countries. On Thursday, 23rd of February 2017, led by the National Association of Nigerian Students (NASS), infuriated Nigerian students blocked the MTN Abuja headquarters as the senate debated on possible retaliation including the possible prohibition of prohibiting the likes of shoprite, MTN, and DSTV from carrying out business activities in Nigeria. The militants also warned South Africans the only way to secure the safety of their nationals in Nigeria is to stop all hostilities against Nigerians in South Africa conducting

legal business (Akuki, 2017).

Nigeria's approach to these attacks seem to be more declarative and less reciprocating in nature. Thus, giving the South African government a kind of monopoly speaking for both countries in the wake of xenophobic acts perpetrated by its citizens against immigrants and of recent, notably Nigerians. Past studies in Nigeria on leadership and sustainable development challenges have noted corruption and the lack of necessary skills by public officials to perform in terms of proper policy formulation and implementation as catalyst of poor governance and management in Nigeria (Gberevbie, 2017). This incompetence is evident in the response of the Nigerian government officials to xenophobic attacks against Nigerians. Although, the South African government is quick to indicate that xenophobia is in no relation with South Africa and that any perpetrator caught would be prosecuted. The lack of implementation on the responsibility to protect (R2P) Nigerians by the South African government at the dawn of xenophobia cannot be overlooked (Olanrewaju, 2022). Unfortunately, the world is yet to learn who was or those who were behind the initial xenophobic attacks as well as the ones after it and how many of them were strategically carried out (Olaode, 2017). The Nigerian people and its various groups have publicly expressed their utmost resentment to this inhumane treatments.

Conclusion

This paper specifically focused on the view expatiated upon by utilitarianism as a mechanism to settle the fractured bilateral relationship between Nigeria and South Africa as a result of xenophobia. As well as an attempt to analyze the reasoning of South Africans, why they have resulted to constant xenophobic attacks on Nigerians through the frustration-aggression theory. The paper traced the origin of political and diplomatic relations between Nigeria and South

Africa dating back to the apartheid regime without omitting how the relations then have influenced the current bilateral relations between the two countries today considering the rise in consistent xenophobia launched against Nigerians in South Africa over the years. This paper argues that the promotion of an optimistic and mutually beneficial bilateral relations between the two states will foster overall satisfaction and happiness of nationals of both countries. It states the importance of goodwill for all and not only for a fraction of the people.

The satisfaction of South Africans should not be at the expense of the security and misery of Nigerians and other nationals. It emphasized how the affected bilateral relations between the states can be promoted and the events of xenophobia should be handled with immense consideration of both parties without leaving one state helpless at the mercy of the other. The Nigerian government and other groups have responded in a non-retaliating manner and rather declarative, this shows violence does not beget violence and the relations existing between the states can be resolved. The paper identified the political and economic impact of Nigeria and its nationals in South Africa as well as the need to protect Nigerians from every form of maltreatment.

Recommendations

The Nigerian government should inform the South African government that the actions taken by South Africans which have led to the death of several Nigerians, regardless of the preceding actions that must have resulted in that, does not fall within the moral ethics of any society. Therefore, are not tolerable towards the Nigerian people. This will imbibe a sense of responsibility in the government of South Africa, knowing that the Nigerian government will not sit back while its citizens are being violated by the same South Africa, Nigeria helped free from colonialism and oppression.

The government of Nigeria should establish a bilateral committee with South Africa that places strong emphasizes on the need to foster the overall good and protection of Nigerian nationals in South Africa and vice versa. As an adaptation of the goodwill in utilitarianism for both countries and to ensure the national interests of both states are being protected as well as promoted. The committee should have a regular scheduled meeting. In order to end the sour relationship that had existed between both nations there should be an increased level of diplomatic dedication between Nigerian and South Africa.

As a sign of goodwill and what ought to be, as promoted by utilitarianism, the South African government ought to assist Nigerians who have been displaced and harmed as an aftermath of xenophobia and help restore their businesses after they were damaged as a result of the attack.

Systematic corruption should also be addressed by the Nigerian government. This is a major

contributor to the nation's poverty and high unemployment rate which is a fundamental reason many Nigerians have emigrated to South Africa. Nigerians in South Africa are mostly business owners making them key targets of xenophobic attacks.

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Chapter 7 - The Rationality of Rational Institutions

Christopher Shane Elliott 

Chapter Highlights

- This paper integrates recent anthropological perspectives, particularly from David Graeber and David Wengrow's "The Dawn of Everything," into ongoing discussions about structure and agency in sociology.
- Critiquing positivist sociology, it questions the assumption that rationalized macro institutions naturally frame the micro time horizon of human agents, proposing that historical capacities of humans challenge this view.
- Drawing from anthropology, the paper asserts that human agency historically played an active role in creating macro structures through dialogue, challenging the conventional view of structures solely constraining agency.
- Contending that modern structures emerged by limiting human agency, particularly through the European colonialist project, the paper explores how these interventions influenced the development of macro institutions.
- The paper proposes, through a synthesis of Foucault and relational sociology, that modern macro institutions result from rationalizing systems recursively shaping human agency to maintain their social form
- Critically examining positivist sociology, the paper highlights theoretical blind spots arising from the generalization of agency and structure across space and time. This oversight may conceal opportunities for aggregating human power to challenge existing structures.

Introduction

Developed to make sense of the emerging modern world, positivist sociology often takes key aspects of power configuring its structural persistence for granted. Critics argue for a reflexive sociology that focuses on idiosyncrasies endemic to the dynamic accumulation of social systems over time (Burawoy, 1998). However, the persistent challenge of linking micro agents to macro structures (Latour, 2007; Pyyhtinen, 2015) keeps a variety of research styles and traditions active; so the debates between reflexive and positivist sociology remain unresolved.

By developing a puzzle between positivist positions in agency/structure debates and anthropology's *The Dawn of Everything* (Graeber & Wengrow, 2021), this paper suggests a synthesis between Foucault's notions of body power (Featherstone & Turner, 1995) and relational sociology (Emirbayer, 1997) could offer a new avenue for resolving micro/macro issues. Positivism here denotes research seeking to mimic the generalizability of concepts found in the hard sciences (Donaldson, 1997). In the debates below, these epistemologies assume the power of modern states to order reality, so markets, jobs, universities, and other macro level institutions persist. This bias applies a particular conception of the relationship between space and bodies to all such cases for analysis. Ontologies are cast against the modern institutional system as the universal pool in which abstractions ordering humans might exist. This obfuscates the power of the contemporary institutions to order the environment, such that power functions without obvious observation (Burawoy, 1998; Lukes, 2021). While the situation might be true of these structures here, the bias hinders research paradigms—and their ontologies—which might disrupt the power of modern institutions.

For example, why does racism and other symbolic inequalities remain material intractable social problems? Intersectionality proposes symbolic boundaries from multiple sources intersect on bodies. It has proven to be a fruitful but incomplete approach. While Collins consistently questions the problems with analyzing social power using social tools (Collins, 2015), positivism creeps into intersectionality both epistemologically and methodologically. In its philosophy of knowledge, intersectionality generalizes concepts like “symbolic boundaries” or “race” as existing in an abstract universe of similar concepts causing oppression. This presupposes nation-state systems, obfuscating their power to order reality according to a particular non-human logic. Symbolic boundaries (Lamont and Molnar, 2002)

and race may only exist if nation-states have the power to control space, and define bodies abstractly, such that these become organizing principles within space it controls. Analytically studying the intersection of state-produced categories on the body only creates another set of abstract categories ordering micro realities. On its empirical accomplishments, Patricia Hill Collins (2015) has admitted to dilemmas in defining the approach and notes the project has so far amounted to an analytical style, rather than a theoretical framework. Hence, intersectionality is a powerful idea that resonates across the academic landscape of smart people trying to understand what is wrong with this colonial system that some humans produced, but inadequately conceptualizes the power of modern institutions shaping the system.

Modern institutions need humans, and humans need them. Bureaucracies stabilize their occurrence across bodies, while using bodies to power this occurrence. Examining this paradox is the heart of sociology. Foucault (1995) argues modern institutions require subjects to self-discipline themselves, reducing their abnormalities until “normal” represents institutional prerogative. This school of thought has catalogued the development of techniques institutions need to create the self-disciplining modern subject. However, despite the axiomatic acceptance of his work, concepts situated by the emergence of modernity tend to naturalize the occurrence as the outcome of evolutionary progress.

Positivist approaches to the agency/structure debate assume modern humans in modern structures as the dynamic for abstracting its ontologies. Rationality emerged once Western humans began using systems to reflexively plot courses of action, rather than reproducing the brutish conditions of limited survival offered by ancient hunter-gatherer traditions. Hence, modern institutions are the outcome of growing complexity in simple structures once enacted by the press of norms on embedded persons. As techniques like farming and urban living developed, other societies mimicked this “progress.” Hierarchical domination became necessary—and inequality unfortunate—as societies grew more complex (Lenski and Nolan, 2005). Modernity eventually emerged, bifurcating reality into an obscure “macro,” and a “micro” that humans occupy (Habermas, 1985). Institutionalized structures ubiquitously exist to frame context enabling and constraining human agents. Relational sociology, cultural pragmatics, and institutional theories debate how/if “agents” might affect “structure,” but this positivist epistemology assuming modernity’s emergence is consistent across their debates.

Relational sociologists (Crossley, 2013; Emirbayer & Goodwin, 1994) might argue the history of relations between space and bodies—as controlled by institutional technologies—create symbolic/structural bundles such as race, brands, and jobs that can be observed ordering the temporal movement of bodies through space. In other words, institutionalized space concretely orders bodies, and its relational history may be traced. However, relational sociology also remains positivist in its reaching, drawing too often from history’s still-water pool of possibility—which, via the positivist assumption of independent variation across variables, reproduces the presumption of modern systems as natural outcome—or Niklas Luhmann’s (1995) work to imply a general space for humans to construct and deconstruct their personal ontologies while moving through time.

Recent work in anthropology offers a fixed point for relational sociology to begin this needed work of sketching modern institutions’ concrete history, thus adding another chapter to Foucault’s legacy. Summarizing a range of new discoveries regarding the surprising complexities of ancient societies, David Graeber and David Wengrow (2021) argue reflexive political debate, farming, bureaucracy, complex social structures, hierarchy, inequality, and rationality originate much differently than Western thought recognizes. Pre-modern humans used dialogue to collectively construct the internal dynamics of societies, relative to an imagined external environment beyond the context of the group’s dialogic structure. Drawing from relational sociology, I argue these structures varied in complex, aggregated configurations, suggesting humans naturally have the capacity (i.e. agency) to collectively generate macro structural environments.

Graeber and Wengrow identify three kinds of institutional technologies that humans developed to gain power in their social systems. These they labeled violence, knowledge and charisma. Throughout known history, we may observe societies variously controlled by none, one or two of these technologies. Societies where systematic domination exists, they refer to as “first order” and “second order” regimes. Consistent with evolutionary ecological models (Lenski and Nolan, 2005), most of human history was hunter-gatherer, which had no systematic regime of power. Advanced horticultural societies adopting patriarchy tended to be first order regimes based on violence. Urban dwellings marked the earliest forms of bureaucracy, using knowledge to legitimate measures of social control. Second order regimes combined these in civilizations like the Romans (charisma and violence) or Egypt (knowledge and violence). However, Graeber and Wengrow demonstrate that, if a particular

system became oppressive, people resisted. People either dismantled them or left their territory. Since no material system of interlocking regimes controlled planetary space, humans successfully resisted technologies of first and second order regimes. The colonial project birthed a new kind of institutional technology—a third order regime, successfully combining all forms of domination in the patriarchal systems of representative democracy. The Treaty of Westphalia marks a watershed moment when all of Europe decided its system was “civilization,” and all others were suitable for assimilation (Nisancioglu, 2020). Since that moment, modern institutions have progressively swallowed space where people might resist.

This paper is organized by presenting a puzzle, a tool for solving it, and implications of having that puzzle solved. I first describe common themes in the ontological limitations of positivist epistemologies in rationality, inhabited institutions, cultural pragmatics, William Sewell’s (1992) duality of structure, and relational sociology. By presuming structures both enable and constrain agency, each of these naturalize the occurrence of modern institutions. I then describe the “ancient agency” found in the anthropological record as consistent with positivist conceptions of agency, only capable of generating macro structures within the spatial-temporal limitations of human cognition. This puzzle suggests that generalizing the power of modern institutions to produce macro structural reality obfuscates the mechanisms that control humans—the line of inquiry pressing Foucault’s research.

The second section presents a tool for addressing this puzzle. Relational sociology may usefully frame a comparison of within-system structures that constitute agency relative to some perceived environment. Drawing upon Foucault’s notion of rationality as relatively constituting the subject based on its context, we may juxtapose human rationality with institutional rationality. Applying this lens to the puzzle of ancient agency, I argue that modernity’s emergence is idiosyncratic with respect to the generation of macro structural reality. Before modernity, humans generated macro structural reality using internal relations emerging through dialogue and the body to project an imagined external. Modernity marks the progressive closure of these spaces by artificial institutional prerogatives, which perceive a synthetic world beyond the cognitive apprehension of humans.

The rationality of rational institutions describes a link between micro and macro reality that is specific to modernity: these institutions have a synthetic, non-human agency that collectively

shapes social systems. Research implications suggest that generalizing agency/structure dynamics without problematizing the continuities of artificial, aggregate institutional power in the modern system, relative to its emergence, risks obfuscating who (or what) shapes structure.

Puzzling Positivist Conceptions of Agency

Research epistemologies appropriate for advancing how micro level causality aggregates into causality between institutions at macro levels of analysis remain needed (Fligstein & McAdam, 2012; Fuchs, 2001; Krause, 2013). In positivist sociology literatures, research tends to be specialized along variables, concepts, and types of data that interact within a “like range” of analysis level, with limited ability to connect levels. For example, sociological research in the workplace can connect structural conditions at the level of jobs reliably to employee attitudes, such as job quality (Kalleberg & Vaisey, 2005) and meaningfulness (Hodson, 2001), but research concerning broader external institutional structures such as markets or global politics impacting the organization—which should affect workers’ attitudes—is left to macro-level analysis, which use different variables, concepts, and forms of data. Perspectives such as relational sociology have attempted to bridge this divide by eschewing the substantialist divisions implied by variable analysis, but still undertheorize the cumulative effect of power in the history of modern institutions. This difficulty stems from a broader epistemological weakness in positivist sociology that presumes institutions are naturally occurring, rationalized structures conditioning micro scale contexts for human agency.

For micro level researchers, the struggle has been uphill against sociology’s Western bias in defining modern institutions. Max Weber argued rationality was a product of the Enlightenment, which would make rational humans specific to Western European societies following its medieval period (Townley, 2008). It was a superior form of social organization that Weber felt ambivalent about the dangers of, but also presumed no other society could have created. In clarifying and debating Weber’s broad usage of rationality, the term has referred variously to a cultural shift that changed how individuals thought, to a related shift in how institutions are built. It is telling how much debate was needed to separate these meanings of that ideologically loaded conception of “rationality.”

Two broad critiques of Weber helped distinguish these meanings: one it is dehumanizing. Scholars have long recognized that rational institutions can exploit or destroy human lives (Horkheimer et al., 2002; Ritzer, 2010, 2013). More research, however, has been devoted to the second critique, which empirically discovers (and rediscovers) that humans do not mechanically enact bureaucratic scripture (Augier & March, 2008; Weick, 1995). Weber viewed bureaucracies as engines of rationality, but “Janus-faced,” meaning, their enactment could equally be a Kafkaesque maze of rules, or clear procedures from which to act (Adler & Borys, 1996). More than any other theorist, Jurgen Habermas (1985), separated rationality from Western progress, arguing rationality was inherent to communication.

Positivist sociology has cohered around the paradoxical consensus that modern institutions are rational, even though the humans enacting their presence are not. Rationality has come to mean a mode of thinking that individuals must adopt if they are to survive the modern institutional complex (Meyer & Jepperson, 2000). Institutions have logics (Thornton et al., 2012)—a guiding compass for what the system needs based on its structure, relative to some other institutional environments—and the human actors perform those logics through interaction (Hallett & Ventresca, 2006). Debates in agency/structure have been framed on the assumption that stacked pluralities of rationalizing institutions are just “out there.”

Theories of the micro level such as inhabited institutions offer considerable advancement in conceptualizing human agency enacting institutional structures creatively within rationality constraints imposed on actors. For example, Hallett and Ventresca (2006) re-reading of Alvin Gouldner’s 1954 classic *Patterns of Industrial Bureaucracy* highlights how the bureaucratic structure took a particular form depending on the negotiated order that interactants achieved within constraints of the context. Building on this notion, researchers argue humans with enough power, (Greenwood & Suddaby, 2006) skill, (Fligstein & McAdam, 2012) or where instability occurs (Beckert, 2010) have the opportunity to change structures. However, Hallett and Ventresca developed their approach against institutionalist schools of thought, which examine interactions between concepts denoting fields, markets, nations, etcetera, but cannot meaningfully incorporate causality between human interactants into their research. Against these presumptions, their theoretical contribution has been to demonstrate that human action can structure spaces populated by human bodies linked in face-to-face daily communication.

In contrast to institutionalism, interactionists argue humans are not just dopes enacting scripts “from above.” Hallet and Ventresca (2006) point out that in Gouldner’s mine, bureaucratic imposition of the new management came from another external institutional context. Hallett and Ventresca treat this external imposition of power as a variation in the forms of bureaucracy that workers enacted in the mines. The fact of this imposition is not suitably explored. One might argue that the nested layering of institutional contexts creates a downward pressure that did have a durable, persistent material effect reducing the space where the labor process is organized through interaction, and thus limiting workers’ ability to control shopfloor tasks. While scholars of institutional entrepreneurship demonstrate rare conditions where human-level gumption intersects with systemic instability to create new structures, the creative power that allows humans to survive and thrive within systems struggles to explain how macro environments become ordered by this interactional capacity. Ironically, symbolic interactionist efforts turn the modern institution into another kind of abstraction. Interactions conjure structure, but levels beyond become generalizable as “fields,” “institutions,” “contexts” or “environments.”

Michael Burawoy (1998) gives substantial treatment to the same problem in a different mine, this one for copper in post-colonial Zambia. The corporation mining copper subsisted within a nation deconstructing its apartheid on a global stage. Methodologically, Burawoy (1998) takes issue with macro comparative sociologists who construct similar cases and then compare across, seeking for associations between variables which might plausibly be framed as causal mechanisms accounting for similar or different outcomes. Burawoy points out this epistemology empowers the assumption that cases of institutional systems vary independently. This assumption is central to quantitative analysis and is mimicked in the positivist theorizing of institutions. To overcome limitations of positivist approaches to causality in institutional contexts, Burawoy argues for an extended case study method. He finds the external locus of control and explores the temporal-spatial connections upward and outward as they connect to the structural conditions between management and workers. A complex process of signaling compliance while silently restructuring the system to racially reproduce roles with managerial power was discovered. Burawoy, who, at the time of the study, had not fully developed the extended case method, would regret not tying that context even further outward, to the nation-state system of colonialism ordering Zambia.

Assumptions of independent structural variation in cases bound for analysis likewise operate

in William Sewell's (1992) duality of structure. Sewell's main contribution has been to successfully argue that structures have both material and immaterial qualities, becoming structures if these reinforce each other over time. For Sewell, agency implies control over resources (material) and/or schemas (immaterial) embedded within structures. These immaterial aspects imply agents with culturally transmitted frames and schemas for using the durable resources provided by structures. Therefore, intention or cognition is less important than what is observed as relations between agents and structures, which would be highly contingent on whatever case of their linkage is being observed.

Sewell's formulation has been used to show how institutions can change based on unexpected ways that agents move between structures, accumulate resources, or how agents transpose a schema from one environment onto another. However, Sewell's work presumes a generalizable link between actor and structure that is decidedly modern. Only in unfamiliar environments can things change, or where institutional powers create resources unexpected. The agent becomes a micro-level outcome of modern, built institutional environments, with a limited capacity to shape structures. Sewell suggests comparing cases of agent-structure linkages to observe power relations shaping their manifestation overtime.

The ahistorical modern institutional system also constructs the agents operating in relational sociology. Emirbayer and Mische (1998) define agency in process terms as being action informed by the past, but oriented toward the future. Agency becomes variously a filter for conceptualizing events, for making decisions, or for making sense of decisions (Bazzani, 2021.; Hitlin & Elder, 2007). The focus here becomes the agents' minds, imploding into a multitudinous plurality, where humans may or may not choose the right script for the right context. Humans can hold past, present and future temporalities in their cognitive rendering of the micro (Bernardi et al., 2019). Humans construct a conception of the micro to operate (Kaplan, 2008). While critics of this approach argue the conceptualization relies on the reflexivity (Burkitt, 2016) or the intention of individuals, (Fuchs, 2001) the concept has found traction in many practitioner disciplines. Still, these conceptions of agency within institutions suggests a natural condition of the human agent as having to deal with a spatially-compressed, durable, material plurality of external environments. The conceptual squeeze limits agency to something that only happens within micro-structures (most often within the mind.)

Thus far, I have argued that positivist sociology considers the structure/agency debate from a generalizable frame that presumes the modern dynamic. Tangential debates in culture also suggest this critique. For example, theorists such as Omar Lizardo (2006) and Paul DiMaggio (1997) presume one must cognitively assemble their culture in processes internal to the self. There is little consideration of pre-modern and modern contexts, except for, naturally, more complexity presumed in modernity. On the other hand, cultural pragmatics (Alexander, 2006) is more specific in problematizing the distinction between modern and pre-modern structures. Agency occurs when actors attempt to fuse the micro with the macro by using performance to articulate a story of the macro that creates a frame for micro action by the group. Jeffrey Alexander argues that the simpler the collective organization, the less its social and cultural parts are segmented and differentiated, the more easily the elements of social performance are fused. The more complex, the more the actors must engage in “re-fusing.” They are de-fused, and hence risk being seen as inauthentic. This suggests that mechanisms for connecting humans and groups to the external environments have not changed, but the conditions where those mechanisms exist are vastly different. Consistent with Bruno Latour’s (2012) arguments, by acknowledging the creative power of humans, either cognitively or through interaction, to shape the form micro-structures might take, cultural pragmatics recognizes the basic mechanisms connecting humans, the group, and the perceived external environment have not much changed with modernity.

However, while cultural pragmatics has done much to link micro interactions to outcomes in macro institutional environments, it lacks an explanation for why modernity emerged such that power of performance became so challenging. Cultural pragmatics treats the growing complexity of distance between performer and audience as the natural outcome of Western society (see for example, chapter 2 of Alexander, 2014). It then proceeds to analyze conditions where human performances manage to achieve some power. Consistent with other positivist epistemologies, this presumes modernity emerged following progressively evolving social institutions. The transition to modern structures becomes a taken for granted outcome of natural complexity, and institutional analysis becomes once more a practice of analyzing micro interaction across structural cases of independent variation. Hence, the theory can tell us much about conditions where performance matters—and the impact successful performance has upon the external environments—but little else about the systems shaping the conditions of the performance.

Positivist sociological research thus remains specialized along the interactional plane of humans making just enough sense of these systems to survive them, and the macro comparative research where variables affect other variables beyond the scope of human agency. The agency concept presumes modern institutions because the individual is presumed to be under pressure to comport themselves rationally. In so far as some conception of agency exists, there is a corollary implication of calculating, or at least accounting for, potential actions relative to the costs, risks, and opportunities such actions entail. Sociology's notion of agency takes for granted—naturalizes as prehistorical, given abstractions—that rational institutions exist, and individuals must figure this system to be of consequence (for their actions to matter.) In other words, rationality is an outcome individuals must achieve; it is a form of prescribed behavior. In this sense, the notion that rationality, agency, and modern institutions naturally emerged from the complexity of Western progress become mutually reinforcing assumptions.

For positivism, institutions and nation-states exist as generally occurring abstractions. These are “socially constructed,” so they are real in their effects, but, strangely, generalizable in the same way math would treat observations in astronomy or meteorology. Types of macro environments exist which may be ordered according to observable characteristics, which are then treated as variables having some association with other variables also only observable at the macro level. In this way, the concrete macro phenomena generated by the activity of modern institutions ordering humans, such as corporations, bureaucracies, and nation-states, become the conceptual equivalent to weather, interacting to create contexts humans must deal with at the micro level. This reifies their occurrence as though nature put them here, like molecules or gravity, and so they become abstractions lived through the bodies of people. Systems shaping humans are taken as natural rather than anomalous or idiosyncratic. Modern institutions, however, are not weather.

Ancient Agency

Positivist macro comparative sociology and evolutionary ecological models tend to picture primitive social structures as lacking variation, and the humans within merely enacting cultural axioms unreflectively. For example, in developing their positivist theory of meaning making and social fields, Fligstein and MacAdams (2012) argue primitive humans need meaning to collaborate, and then subsequent chapters pick up the story regarding social

movements and institutions as something that begins with modernity. The implication is that those humans need meaning, and simple structures are the byproduct of this primal groping away from the existential cliff, while modern humans exist within complex structures that enable and constrain that meaning. The intervening moments of history that birth modern institutions are left uninteresting, and so we have another generalist conceptualization of natural institutional environments. Most telling on this theoretical shortcoming is that no mechanisms, relative to social actors, exists that connects internal to external field dynamics—a linkage that will surely be needed to connect “micro” and “macro.” For field theory, the human need to make meaning becomes only useful in explaining why fields vary in what they value.

For more than 200,000 years—a period historians know little about—humans generated collective structures with a minimal built environment, with no way to accumulate learning and skill outside of interpersonal communication. Yet, over this span, hunter-gatherer societies transmitted and grew knowledge intergenerationally. The humans in these systems collectively embodied all information needed to produce (or find) everything they would consume: from food, shelter, clothing and tools to the stories and relationships that would foster stocks of knowledge (Henrich, 2017). Primitive humans destroyed competing primate species, such as Neanderthals, while large mammalian species were hunted to extinction (Harari, 2016). Long before modern institutions emerged, the human capacity for generating structure had already advanced our species beyond its organic evolutionary lineage, even though the capacities of these structures were entirely generated through human bodies. For positivist sociology, agency is made possible by modern institutions. These both enable and constrain human actors. Emerging historical records suggest the opposite: pre-modern humans generated complex social structures reflexively and creatively through the body. The causal arrow is reversed.

Historical evidence discussed below demonstrates that, rather than “traditional authority” autopiloting these primitive structures, macro-level variation was determined by at least two factors: needs of the body, and dialogue. The composition of any group persisted through preferences of individuals to maintain interpersonal relations with others in the group. Embedded group norms did not prescribe membership, so much as providing rhetorical tools (consistent with Swidler, 1986) for individuals to choose groups. For example, Hyemoyost Storm (1972) describes the Cherokee Medicine Wheel—the foundation for their philosophies

of being—by arguing that everyone has a unique perception of even basic objects like the feather or drum, not to mention complex feelings such as honor or happiness. These are based on the nature one is born into, as well as one’s experiences so far in life. One’s journey through life should consist of learning these dispositions, and then seeking paths that will force one to grow. One’s biography could be told through journeys embarked for personal growth and choosing relations with individuals across clans or tribes for the purpose of fulfilling those growth goals. Relatedly, in nearly every hunter-gatherer tribe observed, women have the option of divorcing at will (Lenski & Nolan, 2005). Individuals thus had options to enter into the structural arrangements matching their preferences. Based on relational sociology’s agency, we may suppose that those preferences emerged through feelings experienced reflexively by the body.

Macro structural variation was also generated through collective dialogue. Graeber and Wengrow (2021) argue that the schismogenesis observed when neighboring societies developed near one another reflected conscious political choices. The humans in one tribe narratively constructed the practices of neighboring tribes and deigned to develop their own practices in some opposing or distinct vein. They describe a materialistic slavery society that had developed near an artistic enclave in the American northwest, along with the heroic/kingly societies that developed in opposition to urban bureaucracies throughout central and south America. Moreover, they document several tribes that adopted different orders depending on seasonal variations. Roles, responsibilities, and power within those roles were distributed differently based on fall and winter, versus spring and summer. Rather than being simple structures, people coordinated across vast tracts of land to trade, organize fair grounds entertaining thousands of individuals such as Poverty Point, or run cities with tens of thousands of people despite having no clear institutionalized hierarchy at its center. In his 2011 address, Graeber argues humans generated thousands of “imagined orders,” or conceptions of external environments that informed how to structure the internal dynamics of the group. This collective imagination was an ongoing dialogue.

While most social systems have been governed through consensus and compromise achieved via dialogue, Graeber and Wengrow (2021) argue three forms of institutional domination—technologies whereby some humans disproportionately controlled governance within the social system—have existed throughout human history. Consistent with Lenski and Nolan’s (2005) evolutionary ecological model, they argue advanced horticultural societies developed

patriarchal forms of social structure to support male control over women. These systems tend to be based on violence; warrior cultures often associate with patriarchal domination. Charisma in the form of prestige hierarchies (also described in Joseph Henrich, 2017) or representative elections, evidenced in numerous ancient societies, were foundations for the second form of institutional domination. Knowledge, or rule through the control of esoterica, forms the third. Shamans interpreting the meaning of ritual, or early urban bureaucratic systems comprise examples. Most hunter-gatherer societies had no institutional system of domination. Graeber and Wengrow dubbed “first” and “second” order regimes those that were controlled by one or two of these forms of domination, respectively.

However, if these institutional technologies become too oppressive, resistance would occur destroying that social structure. Sometimes resistance was violent, other times, people abandoned the system and moved somewhere else. According to Graeber and Wengrow (2021), most kings in these systems were symbolic, or even sacrificial. These technologies depended on directly controlling people, who resisted by the impetus of possessing a body. Because social structures were produced by bodies in space that was not materially closed, those humans had options if structures became too oppressive. When institutions became too powerful, people would reject them. Graeber and Wengrow document several “ghost” civilizations that demonstrated centralizing institutional power, but also ended abruptly with no clear explanation. It is likely people left until these centralizing powers had no one to control.

For this reason, Graeber and Wengrow argue that no third order regime had ever emerged. Europe’s constellation of medieval social systems systematically combined patriarchy and charisma following the Roman example, being second order regimes. The increasing burden of taxing the landed gentry for war created more effective tools of centralizing administration, leading to the widespread adoption of bureaucracy and—eventually—the nation state system (Mann, 2012). Scholars today are more seriously considering the 1648 Treaty of Westphalia as the watershed moment streamlining colonialist aspirations (Nisancioglu, 2020). The democratic revolution may have only replaced the charisma of the king with the charisma of the elected official. Hence, the first “third order” regimes form.

What if ancient humans built political structures more rational than modern ones? Since the agency of the body has generated structure for most of human history, treating the current

situation as timeless normalizes what should be anomalous. Western positivism presumes that progressive societies naturally aspired to achieve a specific form of institutional complexity and other societies sought to mimic their implementation. Flipping this idea on its head, Graeber and Wengrow demonstrate that such developments as elections and farming had been around for tens of thousands of years, but continuously rejected, ignored or outright destroyed by humans who opposed the domination these technologies entailed. Humans successfully opposed the progress of modern institutional domination for nearly two thousand years. Yet for positivism, only humans are presumed to be agents, while structures exist naturally beyond their capacity, in a plurality of stacked rationalizing contexts—jobs, markets, cities, nations and all specializing productive/consumptive spaces between—compressing the human conception of space and time. The anthropological record suggests that, while humans intrinsically have a generalizable power to collectively imagine thousands of connections between external orders, history is neatly divided between a time where the social external was imaginary, and a time when it became the material product of institutional power.

Rational Humans versus Humans Rationalized

Bureaucracies build what should be an outcome of dialogic interpersonal political conversation into its infrastructure. Consistent with inhabited institutions, this is how bureaucracy becomes “lived.” The rules and procedures do not always directly prescribe behavior—even where that is the explicit effort—but they do prescribe a definition of the world beyond that bureaucracy that is taken for granted. The needs of the institution become assumed for the actors within its grasp. Humans enact their context based on what is imagined beyond that context. Modern institutions prescribe boundaries for that imagination.

Michel Foucault (1995) saw rational institutions in much the same terms, but consistent with more reflexive epistemological approaches argued for by Bruno Latour (2007) and Michael Burawoy (1998), makes the construction of institutional power using human agency into an empirical question. How did it develop? What techniques do institutions practice which cause humans to enact institutional prerogatives using the natural, emergent powers of cognitive creativity theorized above? Foucault empirically grounded the emergence of this institutional power in the spread of the carceral archipelago, or the specific techniques that shaped, controlled, or contained emergent human power by prescribing narrow definitions of

deviance. A historian in the vein of Max Weber, however, Foucault only documented this development—not the maturation of institutional powers as they aggregate continuously in contexts quite different from the medieval halls his work haunted.

Moreover, Foucault began his inquiry on the assumption that human bodies had natural powers that resist institutional discipline. While the idea that power is emergent at the micro level is somewhat axiomatic in Foucauldian research, it has taken for granted the power of social institutions to accomplish this control. Foucault treated bodies as problems discursive techniques must find some way to contain. How Foucault's insights might lead to resistance is less studied (Turner, 2008). Labor process theory split along this Foucauldian turn, becoming something of a dead-end since there was no way to conceptualize resistance if human actors are prefigured by ubiquitously emergent micro power (Thompson & Ackroyd, 1995). A separate vein of research emerged focused on this aspect of Foucault, but remains disconnected from workplace studies, and tends to view bodies as texts that society writes upon (Featherstone & Turner, 1995). Foucault's insights have not been followed regarding how this natural resistance might aggregate, into wild cat strikes, for example, or workplace violence between workers and managers. Presumably bodies have breaking points. While workplace studies have benefited from Foucault, they have exhausted the limits of his work to explain the automaticity of micro level control, with no interests in extending his method to analyze the global maturity of institutional power systems.

Naturalizing emergent micro power has the effect of rendering Foucault's most critical insight inert. New technologies had just emerged, which generated a material system consistent with a vision of the state yet abstracted from the spaces to be controlled. According to a particular (institutional) logic, these technologies required the agency of humans to function. The consequences for how that system might dynamically aggregate had not been worked out by Foucault. Hence, by theorizing human subjugation as prefigured while grappling with external environments, positivist research halts the inquiry into how modern institutions so effectively contain human power.

So, if we cannot treat macro institutions as general abstractions occurring on the micro, how should we treat them? In two ways, the answer offered synthesizes Foucault's notion of the body's emergent power with human agency in relational sociology. Firstly, in linking the micro to macro, researchers have argued time is a critical element to observe (Fuchs, 2001)

but have not yet theorized time outside of a generalizable variable or mechanism. This normalizes a particular modern power-time relationship for bodies and their environments. Meanwhile, relational sociology struggles with interests-as-effect within systems, apart from how they are structured. In the case of organic life, interests are critical if we evaluate systems constituting agency, where some degree of internally coherent structure becomes sufficient for achieving agency. To repair this weakness, we may borrow from theories of autopoiesis (Luhmann, 1995) and situate the materiality of bodies as constituting the capacity for agency in some structure. Some system of relations must occur to constitute the structure that is acting. Humans are not conscious of the activity of mitochondria, anymore than they are the beating of their heart, or the pumping of their lungs. These “within-system relations” constitute the organisms’ capacities. Recursion (Hernes & Bakken, 2003) explains how the perception of the external environment constitutes these internal relations. In this sense subjectivity exists for all organisms at the intersection of how that organism perceives what it must perceive to exist in the manner it does. Hence, we may argue that actors are constituted by within-system relations that create varying capacities to act in some context. Some humans, for example, can run faster and jump farther than others. Apple Inc. influences the economy and its ideologies differently than Google, Exxon, or your local restaurant chain.

The body-as-system notion situates interests as they perceive that body moving through time within some externally perceived environment. Concomitantly, time becomes observable relative to the manifestation of being (Heidegger, 2010). The time necessary to perceive and act within some system constitutes a basis for specifying variation on the forms bodies/systems may take as agents. Note: this conception does not preclude the potential for one body to be multiple kinds of agents, depending on its capacity to deploy itself in whatever kinds of contexts. A motorist walks into a bar. Driving to meet her friends for a drink, she will spend the evening as two completely different kinds of human-level agents: the driver in traffic through the vehicle and the gregarious extrovert through the body sensing collective emotion.

Secondly, Foucault argued each human body was a source of emergent power that had to be contained, while relational sociology suggests humans have the capacity to affect the structures constituting some aspect of their agency, both individually and collectively. For both literatures, there is a seemingly paradoxical effect where the context situates the collective/individual agency, while the agency must enact—and possibly alter—the structures

perceived. Agency here can refer to reasoning and intent, as found in relational sociology approaches, or it may refer to the bodies' power to enact structures, as found in the consistency between Foucault—power as that which must be contained and directed through biopolitics—and Sewell's duality of structure, where the existence of structures implies agents' capacities to access embedded resources. This occurs naturally for humans within a micro level "lifeworld" (Habermas, 1985). Following Foucault, reason constitutes the subject within the lifeworld (Townley, 2008). Hence, the second dimension of synthesis states that rationality is relative to the form the subject takes. Moments in time occur synchronically with the power of systems to engage durable material realities for their subsistence. Rationality is observable relative to how systems perceive the environments that sustain their capacities to be systems capable of action. Time structures the elements of recursion which vary across types of agents, systems, and environments.

Rather than relating humans to one another through networks or other forms of relations to presume analytical categories existing within macro environments, this comparison suggests relationships internal to structures create capacities for agency, while structures perceived to be external to that relationship create another kind of relationship—that of the (internally persistent) agent within some other external structure. Hence, rationality is relative to the consistency with which internally-coherent structures constituting agents persist within contexts situating their manifestation as agents. The Facebook friends network does not possess agency, but the football team does. This notion entails duality—a durable external environment exists separately from the agent, while simultaneously being an element of institutional logic/cognition—but not one that is essentializing or fixed.

Following this synthesis, how should modern institutions be observed? Foucault suggests planetary history may be mapped by the spread of this modern institutional power. A new concrete external material environment that has been continuously enacted from a recent fixed-point relative to the capacity in social systems generated. It is here that fixed points in conceptualizing institutional powers may be articulated, and generalized from, as it generates layers to macro institutional context. In other words, each institutional context could be treated as concrete contraption, rooted spatially in its control over bodies, and temporally in its connections to other institutional systems legitimating its power.

If modern institutions require human creativity and energy to function, and if humans can

rationally build social systems without modern institutions, we may then juxtapose the rationality of humans with the rationality of institutions. Doing so finds much consistency in the meaning of the term “rational.” Humans and institutions have specific kinds of logics for perceiving different kinds of external environments; and the conception of that environment determines how to enact the micro context—which only occurs within the sensory capacities of the agent. These may be distinguished by the materiality of internal relations constituting the spatial-temporal character, capacity and scale on which agency/structures dynamics are enacted or observed.

In the modern world, the macro is generated by institutional logics, which stabilize a different social form. Hence, they have a different rationality subjected to institutionalized definitions for external environments. This occurs within a synthetic environment that is also at a higher order level of abstraction (nations, markets, treaties, etcetera). Hence, institutional agency shapes human enactment relative to its perception of its environment. Far from anthropomorphizing—a stigmatized suggestion for the positivist literature—institutions perceive and behave, just in few ways that resemble human. Consistent with Habermas (1985), macro refers to whatever is beyond what systems perceive; micro refers to the contexts navigated within the spatial-temporal recursive rhythms constituting the stability of within-system relations.

Positivist research on institutions progresses by pretending they are only metaphorically conceptualizing the agency of institutions (see Latour 2007 for a critique), in theories such as the institutional logics, resource dependency, organizational evolution, or field theory. It is just pretend for the sake of analysis. The analysis describes macro-occurrences beyond human cognition, and the true causal impetus for institutional logics remains a mysterious outcome of human behavior. Yet these logics constitute both humans and other institutions as environments or resources, variously determined by how it defines value. It is a new social technology that we may trace a direct line from the Treaty of Westphalia to the nation state system, to the current scale on which populations are integrated. This marks a new type of materially aggregated external environment, a material institutional system, that did not exist before the 17th century on a global planetary scale. It has progressively closed space according to institutional logics for replication within fictional orders, by reducing space and specializing human-level agency regarding the meaning and form of relations with external environments.

Modern institutions and humans generate different kinds of social structures, relative to the capacity of their respective forms. Let us sketch a thought experiment in the style of Foucault, by juxtaposing two extreme conceptions of pre-modern and modern power. If hunter-gatherer social structures were generated by about 40 persons (Lenski and Nolan, 2005), that means each individual contributed at least two and half percent of the power needed to produce and maintain the social system. Each person generated two and half percent of the physical labor and the creativity in terms of problem solving, planning, learning and so on for that social systems' collective survival. Is there any way to calculate how infinitesimally small modern humans are by comparison? Depending on whether one takes the entire population of the planet, or just the West, or just capitalist nations, the order of magnitude could be billions or millions times smaller. The power afforded pre-modern humans by virtue of their independence from the modern system is so incomprehensible to our culture, we must invent superheroes to fantasize the possibility (Bainbridge, 2017). This thought experiment suggests pre-modern humans, relative to the capacity to embody a system capable of reproducing itself both individually and collectively as an agent, were substantially more powerful than modern humans, who are inconsequential relative to the input and output power needs of modern institutions generating macro social structures for their maintenance.

Humans did generate macro structures from bodies in reflexive ways that created freedom at individual levels of autonomy to the point that in all known hunter gatherer societies, women could get divorced at will (Graeber and Wengrow, 2021). In terms of resisting domination, those human systems enjoyed two advantages the modern humans do not. One, the material capacity to reproduce the collective was internal to the bodies that comprised the collective. Secondly, a great deal of informal space existed between macro systems. The built institutional environment lacked integrated global development. An enterprising set of humans only had to gather a group willing enough, and a new social system could be established. Hence, avoiding oppression and domination is rational for humans becoming situated by institutional power in space and time—if they have options. Rational humans resisted the imposition of this logic—until all space and time became formally closed, integrated into a system of between-agent structures operating against new institutional environments (the Treaty of Westphalia, and then more gradually, markets)—and they no longer could.

Humans rationalized accept that modern macro structures order space and time for their existence. Institutional logics (rationality) frame human behavior to attain institutional goals, within time frames pulsing at the rhythms of agentic powers situated within contexts befitting their power; when profits or enrollments are calculated, or new drugs are finally approved, or treaties are signed. However, macro structures—money and markets, nations, regulatory environments—only exist to the extent that other institutional actors have other forms of material power (controlling bodies in space) to enforce these definitions. The modern macro-order is a fiction generated by institutional prerogative, to sustain institutionalized prerogatives.

Institutions do perceive an external environment that imposes energy needs downward on human bodies. Corporations require both labor and money from humans to subsist. Their conduct is rationally oriented to achieving these outcomes, and thus a symbolic external world beyond human level agency is enacted. Hence, institutions have material capacities that generate structures beyond the human scope of agency. This could potentially be the “missing link” between micro and macro structures—the agency of the institution.

Discussion

A persistent question between positivist and reflexive sociology has concerned the emergence of modernity (Burawoy, 1998; Collins, 1999; Latour, 2012). In practice, positivism tends to treat history as a set of example cases, which may or may not be useful for answering questions about concepts varying at different levels of analysis. Some, such as Michael Mann (2012), give the question extensive comparative consideration—examples on the rise and fall of civilization provide evidence where causality needs to be explained, so generalizable concepts can be defined—only to decide there is no answer a generalist approach can provide. Mann concludes that Europe was a special case causing modern institutions to develop. This power came to dominate humans. According to Graeber and Wengrow (2021), the historical answer is much simpler: Nation-state institutions closed space so that no other kind of macro system could form. While positivist scholars would likely agree with this observation, the problems with presuming the natural progression of complexity when conceptualizing power, agency and structure relative to the rationality contained within a social form are less obvious.

Positivism tends to generalize conceptions of agency against modern structures, assuming it naturally represents the most complex systems humans have formed. If we apply relational sociology's concept of agency to hunter-gatherer humans, we find a similar process of imagining multitudinous external structural environments that shape the choices made by the human actor. Humans generated material and conceptual (through performance) macro structural environments. Foucault's work suggests modern institutions developed once the agentic, creative power allowing ancient humans to create their own social systems could be successfully contained. In other words, human generative powers required controlling for this modern sort of institutional system to develop. This implies a very different set of causal mechanisms in the emergence of institutions, one where modernity develops despite human effort, rather than because of the "natural" progression of complex structures. In other words, humans did not become more rational. They learned to accept a rationality that is not human.

To anthropomorphize institutions is unreflexively rejected in positivist thought, with little argument or discussion (see Scott, 2006). Institutions are considered outcomes of human agency separated only by time from the humans whose actions created them. To project human thinking onto institutional logic is an ecological fallacy. Why? Rarely does Western theory suggest the human-centricity in this line of thinking. By not considering rational institutions as coherent actors perceiving synthetic environments, that type of actor's power to shape reality becomes invisible.

For example, "organizations" is a specialty area of sociological study that naturalizes the presence of institutions. In a long-celebrated piece, DiMaggio and Powell (1983) depoliticize the power of states to enforce the meaning of money in their articulation of "isomorphism." Natural isomorphism may be observed when the pinwheel seed and the fly's wings both form similarly appearing structures for overcoming gravity using air pressure. The evolutionary lineage linking flies and seeds extends so far backward in time, the pressures of the environment become the most likely proximate cause creating similarity in material forms agency's persistence requires. The same cannot be said of the oil corporation and the university, who both depend on citizens, workers, consumers and money, prefigured by the logic of the nation-state system, powered by the threat of violence. Organizing is something humans do naturally; rational organizations can only exist if state power demarcates one external definition of the environment (money markets in a global order) mandating one

mode of social production. The state requires power to impose this definition on humans located in space and time.

If technologies for casting and controlling macro level realities across space and time exist, there will be levers for humans to grasp and control other humans, who can only enact environments symbolically with interconnected bodies perceiving dialogically constructed space (i.e. the micro, in positivist terms). These spaces relate to the structural bundles nation-states control for humans to use in their subsistence. By treating them as abstract symbolic concepts varying independently across bodies, we naturalize the concept's occurrence independently of the colonial system. This has the effect of over-emphasizing the micro level as causal in the reproduction of human-level material and symbolic dynamics. These symbolic categories (Lamont & Molnar, 2002) cannot materially matter outside of nations enforcing borders and the meaning of bodies within and beyond its borders. Power over space by institutions creates contexts so abstractions such as race may serve as manipulatable narratives for the role of bodies.

The positivist notion that macro structures are somehow generated by the aggregation of micro action undergirds a humanist ideology that all social structures reflect human intent. Structures become outcomes of human enactment, human imagination, human creativity, accumulating on top of embedded actors interacting with other humans. However, modern interaction within bureaucratized contexts is not naturally occurring, but prefigured by technical problems the institution faces relative to its maintenance as an institutionalizing system, within other institutionalizing systems. Humans would choose to enact a much wider variety of macro structures, meanings, values, and ways of life, given the opportunity. The Great Pause may be seen as the institutions temporarily losing this power, and worker-consumers realizing just how controlled their preferences are by institutionalized power over time and space.

This is the rationality of rational institutions: Institutional prerogatives draw power from bodies, according to needs perceived to sustain within-system internal structures against perceived external environments. Presuming all structures are generated by human agency renders the rational, collective shaping of the macro system observable only as another abstraction: the irrational downside of dehumanizing institutions that cannot really function without human cognition enacting its presence. However, linking micro and macro levels of

analysis may require recognizing the rationality of artificial actors behaving according to their interests.

Three research imbrications follow such a program. One, researchers should follow Foucault's project of articulating the cumulative closure of space by specific techniques invented by institutions that must harness the natural, emergent cognitive powers of creative humans theorized above. Each modern institutional domain was created under specific historical conditions in response to the material power over space begun by the European colonial project. The modern institutional system is cumulative and dynamic from a fixed point occurring only a few hundred years ago. It is bereft of independent variation across cases of macro institutional power shaping human social life. These do not naturally exist, but as technologies that must control human agency to derive the needed value, energy, or effort to subsist.

Secondly, conceptualize institutional behaviors as rational relative to their environment. Rather than structures external to humans, treat bureaucratic, nation-states enacting institutions as machines with artificial intelligence. This suggests artificial intelligence has existed since the nation-state system emerged, and the rationalizing technologies of digital computers are only cast within conceptions of external environments sympathetic to their expansion. New technologies, such as machine learning, enhance the power of existing colonialist institutions to order reality according to their input/output needs. The operation of digital algorithms using information to control the conception of reality as perceived by human citizen worker-consumers makes sense in this context. Bureaucracies rationalize human effort and energy to achieve their goals, and machine learning is another tool in that project beginning with the nation-state system.

Finally, this research program would presume human agency naturally exists first through the virtues of possessing a body, and that cultural prerogatives develop subsequently. Each human body is thus intrinsically a potential node for connecting with other bodies to resist the imposition of rationalizing institutions. As anthropology reveals, history offers an increasingly large treasure trove for the kinds of social systems created when humans generated the macro. Freedom from oppression is often an intrinsic property always contested or emerging in these systems. This suggests that inequalities generated by modernity are not caused by meanings specified by logics, but by social technologies for

casting logics across humans. When that macro space is disaggregated, ideologies like race cannot be broadcast to create a terrain for external narratives that define the reality within which humans must contend.

Conclusion

Continuities in institutions fixed by modernity's emergence require further scrutiny before generalizing dynamics between micro level agency within macro level structures. Anthropological implications following Foucault's work suggest that prior to modern institutions, human agencies generated a plurality of overlapping macro structures that reflected the idiosyncrasies of free individuals, operating rationally to collectively construct their worlds. Modern macro institutional environments are cast at a level of spatial-temporal aggregation beyond this human-level generative power. Modernity may be characterized as the authoring of fictions within fictions by machines ordering conceptions of time and space for humans. Conceptualizing power, time, agency, and structure without theorizing this distinction in the forms of systems enacting imagined external environments obfuscates synthetic logics ordering human reality, thus concealing the ongoing continuity between the roots of this project and the fruit it now bears marshalling humans at scale to generate its domains.

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SECTION III - STUDIES ON TECHNOLOGY

Chapter 8 - MOOC Camp-based Flipped Learning in Higher Education

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Chapter Highlights

- MOOC integration into traditional classroom offers potentials and possibilities to scalable teaching and learning.
- MOOC camps offer complementarity with the flipped learning approach which opens pathways for harmonizing synchronous and asynchronous teaching and learning.
- MOOC camp-based flipped learning (MCBFL) offers an alternative pedagogical method that allows educators to integrate MOOCs into a traditionally-taught classroom using flipped learning approach.
- MCBFL provides students opportunities for anytime-anywhere learning, onsite and online connection with teachers and peers, and improvement in digital competence.
- Digital divide remains to be a huge challenge to the MOOCs' promise of delivering open and accessible education to learners globally.

Introduction

Since their inception over a decade ago, Massive Open Online Courses or MOOCs – a developing, innovative, and revolutionary field of research and innovation in education – are gradually emerging across various disciplines and fields globally, in the context of rapid change, openness, and “massification of education” (Babori et al., 2019). Powered by the Internet, information, and AI technology, MOOCs have surged rapidly and have broken borders and barriers to democratize access to education (Bates, 2022; Guajardo-Leal et al., 2019; Metallo, 2019; Wang & Zhu, 2019), emerging as a new platform for online learning (Lee et al., 2020). To date, the ubiquity and upsurge of MOOCs worldwide has accelerated the growth of study on the various facets of online learning and online distance education. In line with this pattern, recent investigations examined MOOC pedagogy, attrition and completion rates (Aldowah et al., 2019; Jordan, 2014; Kang, 2020), language and social engagement (Barak et al., 2016), student learning (Breslow et al., 2013; Mabuan & Ebron, 2018), and/or learner engagement (Anderson et al. 2014; Jung & Lee, 2018), and MOOCs for teacher professional development (Mabuan et al., 2018; Mishra, 2018). However, little is known about actual MOOC camp participants’ journey and experience (Chaker & Bachelet, 2020; Samar, O’Hare, & Rodafinos, 2013; Wang & Zhu, 2019), particularly in the Philippines. Given that MOOCs are gaining popularity around the world, it is important to look further into the experiences and perspectives of learners from a variety of angles (Barak et al., 2016; Chaker & Bachelet, 2020; Kizilcec & Schneider, 2015; Sinha, 2014). The research of participants' experiences is covered in this paper in light of the aforementioned, alongside their perspectives and attitudes in participating in a MOOC camp-based flipped learning. The following literature review addresses the topics of MOOC camps, flipped learning, MOOC camp-based flipped learning, and students’ experiences and participation in such environment.

MOOCs and MOOC Camps

Free online courses called MOOCs are accessible to everyone who wants to learn anything, anywhere, and anytime. They are distance-learning courses which are run online by many universities worldwide and allow anyone from any background to register using any Internet-connected device for free or at a very minimal cost (Pop, 2021). Shah (2021) reported that by December 14, 2021, there were approximately 19,400 courses offered by more than 950

universities globally, and taken by some 220 million students around the world, in some of the world's biggest MOOC platforms: Coursera (www.coursera.org), edX (www.edx.org), Swayam (<https://swayam.gov.in/>), and FutureLearn (www.futurelearn.com). MOOCs are typically brief courses that can span four to six weeks or even longer. Each weekly module requires a five to six-hour time commitment to finish all of its components, depending on the pace of the MOOCer (Sowell, 2019). MOOCs provide a variety of learning components including downloadable module packets, which allow learners with infrequent or unstable internet access to read through content and prepare assignments offline; video lectures, which can be accessed directly on the MOOC platform or downloaded via a mobile app; auto-grading of assignments, which provides MOOC participants immediate and real-time feedback, and helps course instructors to manage easily a large volume of learners around the world; and Creative Commons licensing, making the MOOCs fully open educational resources that can be retained, reused, revised, remixed, and redistributed (Wiley, 2014). MOOCs offer many benefits that can meet the needs of many learners whether they are students, professionals, or just interested learners. Through MOOCs, participants can hone their language skills, learn about a variety of topics, improve their computer and Internet skills, study at their own speed in their own space and on their own timetable, and meaningfully engage with other learners; understand difficult subject matter in other courses, among others (Mabuan, 2018, 2020; Sowell, 2019).

A MOOC camp is a novel concept developed by the U.S. Department of State's Bureau of Educational and Cultural Affairs Office (ECA, 2014). It describes a series of in-person meetings based on a MOOC, which offer participants opportunity to engage with other participants through facilitated discussions led by volunteer teachers, community leaders, embassy staff, alumni and grantees, conversation club leaders, students, and others who all can serve as MOOC camp facilitators (FHI30, 2020; Sowell, 2019).

MOOC camps are established to support learners or MOOCers to maintain their enthusiasm in completing their courses, particularly those who struggle with the course content, have difficulties with technology, and are less motivated in complying with the course tasks (Sowell, 2019). By providing opportunities for interaction among fellow MOOCers and helping one another in completing course tasks and deepening their learning experience, MOOC camps build communities among course takers and create a strong bond among their members. Because MOOC camps provide MOOCers opportunities to engage with each other,

they also contribute to high completion rates (Nunamaker & Catsimpiris, 2019). MOOC camps may be school-based, community-based, or island-based, depending on the coverage of the camps the volunteer MOOC camp facilitators plan to have. For instance, there are island-based camps in the Philippines' major islands – Luzon, Visayas, and Mindanao, and within these islands, there are also numerous MOOC sub-camps in several provinces and cities where the facilitators reside. The MOOC camp facilitators also form their own network which allows them to collaborate with one another and share their best practices in facilitating MOOC camps (Mabuan, 2020).

MOOC camp sessions may be structured in several formats: seminar format, enrichment format, project-based format, and blended format. In the seminar style, you get together and talk about some of the lesson content from the previous week or concentrate closely on a subject that was covered in the MOOC. You can center your conversations on the resources from the current course, such as the films or readings. In the enrichment approach, assisted meetings expand on course material rather than conducting conversations based on the MOOC. For instance, you might design activities based on the material covered this week or invite speakers in. In the project-based model, participants develop and complete projects based on the MOOC's topic that are significant to them or to their community. For instance, participants in the English for STEM MOOC might visit a nearby environmental protection organization to learn more about the work they are doing, then assist the organization in developing a brochure outlining their main activities or contributing to the creation of content for the organization's website (Sowell, 2019).

Flipped Learning

The Flipped Learning Network (FLN) defined flipped learning as “a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter” characterized by its four pillars – the F-L-I-P – flexible environment, learning culture, intentional content, and professional educator (FLN, 2014). Furthermore, the Clayton Christensen Institute (2021) also defined flipped learning/classroom as one of the blended learning models, which flips the conventional link between class time and homework. According to this model, teachers use class time for teacher-guided practice or

projects, allowing students to interact with one another and apply the concepts they learned from the online lectures to classroom activities, while students learn at home via online coursework and lectures in their own time, pace, and space. This model allows teachers to use classroom time for more application-based activities rather than engaging in the traditional lecture-type approach (Clayton Christensen Institute, 2021). Meanwhile, Lag and Saele (2019) examined a number of definitions of flipped learning that were drawn from the literature, some of which focused on the use of digital technologies (e.g., Bishop, 2014), others on the social or interactive nature of the in-class activities (e.g., Abeysekera & Dawson, 2015), and still others on the importance of using a specific pedagogical approach, such as mastery learning (e.g., Bergmann & Sams, 2012) or collaborative learning (e.g., Foldnes, 2016). Furthermore, Bergmann and Sams (2007) called flipped classroom as inverse instruction methodology (IIM) highlighting the reversal of traditional teaching structure to a new teaching approach.

Flipped learning has been explored in various contexts and levels vis-à-vis traditional models of teaching, underscoring its advantages and disadvantages. Some benefits include personalized instruction and learning (Bergmann & Sams, 2012; O’Flaherty & Phillips, 2015), improved classroom efficiency and adaptable technology (Herreid et al., 2014; Ebron & Mabuan, 2021), opportunities for students to develop autonomous learning and responsibility for their own learning (Kim et al., 2017; Mabuan & Ebron, 2018; O’Flaherty & Phillips, 2015), improved communication between teachers and students (McCarthy, 2016), development of active learning among students (Freeman et al., 2014), leading students to “do meaningful learning activities and to think about what they are doing” (Prince, 2004, p. 223). While the literature suggests positive impacts of flipped learning to classes and students, some disadvantages have also surfaced including increased workload for the students since they have to access online lectures at home (Centra, 2003) and the seemingly trial-and-error approach of the flipped classroom stemming from its lack of pedagogical rationale based on its theory of neutrality (Bishop & Verleger, 2013; Lundin et al., 2018). Nevertheless, with its reported gains and losses, flipped learning remains a worthwhile approach for further exploration and investigation, particularly in English-as-a second-language (ESL) classrooms such as those in the Philippines, which have been adopting traditional models in teaching since time immemorial.

MOOC camp-based flipped learning

The concept of MOOC camp combining personal learning and facilitator-led group learning fits well with the flipped learning approach promoting individual learning at the students' own pace and space and teacher-guided collaborative learning in the classroom. In recent years, several educators have adopted pedagogies integrating MOOCs into flipped learning approaches in their classrooms (Hung et al., 2019; Li et al., 2015; Mabuan & Ebron, 2018; Murphy et al., 2016; Perez-Sanagustin et al., 2020; Wang & Zhu, 2019; Yasar & Polat, 2021).

Hung et al. (2019) examined how a flipped classroom that included MOOCs and game-based learning affected the learning outcomes and motivation of students from various backgrounds, which found that such approach can enhance students' learning motivation and outcomes and overall academic performance. Meanwhile, Li et al. (2015) flipped classroom practice into their traditional undergraduate course, and through e-learner satisfaction questionnaires, they learned that their students were generally happy with the revised course's flexibility, instructor response timeliness, instructor attitude toward the technology, technology quality, perceived utility, and ease of use, among others.

Integrating a MOOC into an ESL writing flipped classroom, Mabuan and Ebron (2018) found that their students viewed the setup as a cutting-edge, dynamic, and useful method for facilitating learning and enhancing subject-matter knowledge, as well as a platform for fostering learner autonomy in the face of technological and mentality issues. Wang and Zhu (2019) also explored students' positive experiences with the flipped classroom in terms of student-student interaction, the availability of learning materials, and the outcomes of active learning are highlighted by research into the effectiveness of MOOC-based flipped classroom in a higher education setting, which revealed that students in this setup performed better on average than those in the traditional classroom. Finally, Murphy et al. (2016) explored the viability of combining MOOCs, blended learning, and flipped classroom to engage students and yield higher MOOC completion rates, with initial findings citing students' feedback on learning a great deal from the setup and plans for taking more MOOCs. As MOOC-based flipped learning (MBFL) is still in its infancy (Wang & Zhu, 2019), further explorations are needed to investigate its viability and efficacy across classrooms and contexts.

Students' participation and experience

Alongside investigations on the flipped learning's impacts in the classroom, students' participation and experience have also been explored by some studies (e.g., Kim et al., 2014; Moraros et al., 2015) delineating positive gains for students with IIM over traditional models of teaching. Because flipped learning facilitates a learner-centric educational environment, students are provided more opportunities to assimilate the necessary curriculum concepts while teachers work as guides on the side and not sages on the stage. With flipped learning, the usual teacher-centered lecture time in a traditional classroom setup is replaced with activities that emphasize problem-solving and exploration by students, one-on-one teacher consultation and training during mini-conferences for challenging students, thus creating affordances for the class to become more engaged and interactive (Moraros et al., 2015). As flipped classrooms combine micro-lectures accessible by students anytime and anywhere with practice activities, students are presented with opportunities for mastery of learning and "re-education with video" since the ubiquity of these learning materials allows them to study whenever they feel the need to do so, leading to students' enhanced academic performance (Kim et al., 2014).

As regards students' experiences, numerous studies suggest that students generally hold a positive view towards flipped learning approach (e.g., Gilboy et al., 2015; Hao, 2016; Ebron & Mabuan, 2021; Roach, 2014; Sowa & Thorsen, 2015; Wu et al., 2017). In Gilboy et al.'s (2015) study, 142 students from two courses revealed that they preferred IIM to conventional teaching approaches. This finding echoed Sowa and Thorsen's (2015) findings indicating STEM students' preference to IIM environment over traditional setting, incorporating the educational resources. Likewise, Ebron and Mabuan (2021) and Roach (2014) presented similar results underscoring students' preference to flipped learning particularly the ability to revisit the media-based course materials, which allowed them to review concepts and learn further, something which is not commonly afforded to them by traditional models of teaching.

While the aforementioned studies present recent investigations on flipped learning and MOOC-based flipped classrooms, studies on MOOC camp-based flipped learning (MCBFL) remain underexplored or uncharted, as MOOC camps are yet to be widespread across the

globe and are still gaining momentum in the Philippines, Pakistan, Cambodia, and other countries supported by the Regional English Language Offices of the U.S. Department of State (Nunamaker & Catsimpiris, 2019). Hence, it is timely and relevant to explore MCBFL in various settings to surface its pedagogical potentials and move forward with alternative pathways and possibilities for teaching in the current digital age characterized by networked communities, rhizomatic learning, and global interconnectivity.

In light of the aforesaid, the goals of this study were: (a) to identify students' satisfaction with the MOOC's aspects; (b) to determine the MOOC camp's impact on students' knowledge and skills; and (c) to explore students' experience on MOOC camp-based flipped learning in an ESL class. These goals raised the following questions:

1. What are the students' satisfaction levels on the aspects of the English for Career Development MOOC?
2. What are the students' perceived impact of MOOC camp on their knowledge and skills related to the MOOC's topic?
3. How do students view their MOOC camp-based flipped learning experience?

Method

The research methods and settings are described in the next sections. There are three subsections in the findings section, each of which responds to a different research topic. The participants' MOOC camp experience is discussed in the summary and discussion section, and how they view such experience with IIM vis-à-vis their class engagement and English language enhancement. The final section discusses the research conclusion, limitations, and possible future directions.

Research design and methodology

In order to explore students' participation, perspectives, and experience in a MOOC camp-based flipped learning (MCBFL) approach, this study adopted a descriptive qualitative design utilizing online survey and in-depth interviews, which could help “describe, decode, translate, and make sense of the practices...” (Denzin & Lincoln, 1994, p.2). Also, as per Creswell (2014), qualitative approach is a good choice if “a concept or phenomenon needs to be explored and understood because little research has been done on it,” which underscores

Morse's (1991) notion who states that qualitative approach is useful when the topic is new in terms of exploring variables that should be examined, which is the case in this research. Moreover, with hundreds of participants to be covered in a limited time, an online survey questionnaire via Google Forms was used, mainly because it is an easy, convenient, and inexpensive means of data collection (Andrade, 2020).

Research participants and setting

Study participants were drawn from 1,200 first-year undergraduate students comprising 31 sections or classes handled by six English instructors in a three-unit course called Purposive Communication in a private university in Manila, the Philippines during the first semester of the academic year 2019-2020. The class met twice a week for 1.5 hours per session, totaling 54 hours in a semester. The students enrolled in a five-week massive open online course (MOOC) titled "English for Career Development (ECD)" on Coursera (<https://www.coursera.org/learn/careerdevelopment?>). ECD was developed by the University of Pennsylvania (commonly referred to as Penn), which is a private university located in Philadelphia, Pennsylvania, United States of America. As of December 2022, ECD has a 4.87/5 instructor rating (5,433 ratings) and a 99% content rating (309,209 ratings). It consists of five units: (1) Entering the job market, (2) Resumes, (3) Writing a cover letter, (4) Networking, and (5) Interviewing for a job. Of the 1,200 students who enrolled in ECD, participants for this study were selected from those who completed the course and were at least 18 years old at the time of the post-MOOC survey and reflection. Of these, 1057 completed the course (88%) and from this number, 711 completed the survey and submitted self-reflection (67%).

The flipped learning approach was implemented in the 31 classes during the midterm period from September 10 to October 13, 2019 for five weeks. This timing was important to ensure proper integration and alignment of the MOOC's modules with the Purposive Communication syllabus, particularly with the module on "Communication for Work Purposes." After the orientation delineating their roles and responsibilities in the five-week flipped learning setup, students enrolled in the ECD MOOC and were assigned to complete one unit each week. Following the tenets of flipped learning, they took the MOOC outside of class or at home. They accessed the course units and watched the video lectures, read the articles, completed the online quizzes, and accomplished the unit assessments on their own

pace and space using their devices. In the class, the time was used for workshop-type activities, mini consultations or conferences with the teacher, and for interactive, group, and problem-based activities that aim to apply the concepts learned from the MOOC's modules.

Research instruments

This study used two data sets: (1) an online survey questionnaire which was sent via Google Forms to 1,057 students, of which 711 responded, and (2) focus group discussion and one-on-one in-depth interview among 10 students. The online survey questionnaire consisted of four sections: the first section requested participants' demographic profiles such as sex, age, year level, and location; the second section investigated their satisfaction towards the aspects of the ECD MOOC such as module topics, presentation of the course content, variety of activities, directions provided, and length of course using Likert scale; the third section explored the participants' perceived impact of the ECD MOOC on their knowledge and skills related to the MOOC's content; and the fourth section asked participants about their overall experience in the MOOC-camp based flipped learning setup using Likert scale. Meanwhile, questions in the in-depth interviews with the eight volunteer participants focused on the validation of the results of the online survey questionnaire, as well as their reflections and impressions about this learning experience. The quantitative data from the survey can yield some statistics to draw conclusions, while the qualitative data from the interviews can be used to bring more interesting insights about the topic.

Data analysis

The descriptive statistics of the online survey data was analyzed, while the interview data was analyzed thematically following Guest et al.'s (2014) applied thematic analysis (ATA), employing exploratory (content-driven) approach in order to identify, analyze and report themes or patterns within the interview data. In addition, the qualitative data from the FGD and one-on-one interviews recorded and examined for patterns and connections using Voyant Tools (<https://voyant-tools.org/>). The most commonly used terms by the respondents were shown as keyword clouds (also known as tag clouds) in descending order of frequency. In order to further aid in visualizing the frequency and distribution of the five primary keywords, bubblelines and word trends were also made available. Finally, to see the

underlying relationship inside texts, the five important keywords are displayed in close proximity linkages or collocates.

Ethical considerations

This MOOC-camp based flipped learning project was approved by the university administration, in collaboration with the Regional English Language Office of the U.S. Embassy in the Philippines, which promotes the learning and teaching of English through various programs sponsored by the U.S. Department of State and administered by FHI 360. The ECD MOOC is one of their sponsored MOOCs under the Online Professional English Network (OPEN) Program of the Bureau of Educational and Cultural Affairs Office. A consent form was signed by the students and their parents or guardians before the flipped learning implementation.

Results

This section is divided into three subsections, each of which attempts to address the research questions. The first sub-section identifies students' satisfaction levels on the ECD MOOC's aspects. The second sub-section describes students' perceived impact of the MOOC camp to their knowledge and skills, while the final sub-section explores students' perspectives about the MOOC camp-based flipped learning.

Students' Satisfaction Levels on MOOC's Aspects

For five consecutive weeks, students took University of Pennsylvania's English for Career Development's (ECD) five modules on their own pace, place, and space. After completing the course, they were asked to assess their satisfaction with the following ECD MOOC's aspects: module topics, presentation of the course content, variety of activities, directions provided, and course length, as shown in Figure 1 below.

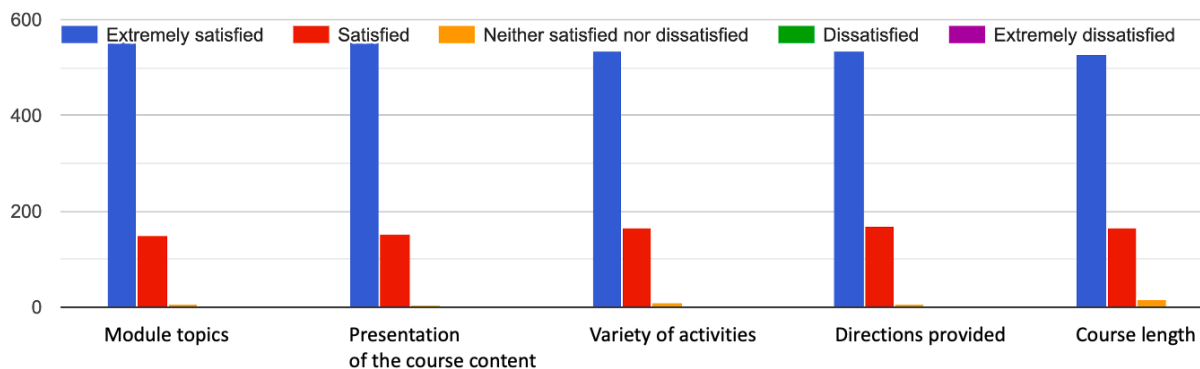


Figure 1. Students' Satisfaction on the ECD MOOC's Aspects

As can be seen from Figure 1, students were generally satisfied with the five MOOC's aspects presented, with consistent responses of "extremely satisfied" across all aspects, with a few indicating "neither satisfied nor dissatisfied" with the aspects presented. As regards module topics, 78% (554) of students reported that they were "extremely satisfied," while 21% (150) indicated that they were "satisfied," whereas a small number of students (0.7%, 5) were "neither satisfied nor dissatisfied." As the ECD modules focused on helping students gain knowledge on how to advance their careers in the global marketplace by learning concepts about the job search process, application, and interview process, while building their vocabulary and improving their language skills to achieve their professional goals, participants reported that they became interested and engaged in the topics as these topics were aligned with their personal and professional goals. This is reflected in the following statement of one of the ECD course completers:

"ECD is a very useful course for me because I was able to learn the important steps in the job search process. Upon completing all the modules, I felt confident about building my own career path..." (Student 8)

This impression was seconded by another student, who also expressed his appreciation to the topics presented in the ECD MOOC:

"...I really love the topics on the job search process, particularly the topics on writing a resume and cover letter and interviewing for a job because they have practical uses for me after my college graduation..." (Student 9)

These findings echo the observations of some studies delineating the significance of presenting students learning experiences that interest them, as it can energize learning and

guide academic and career trajectories (Renninger & Hidi, 2016). Likewise, these findings corroborate with Hidi and Harackiewicz's (2000) claim that when students are interested in the learning topic, they are more likely to pay attention, become engaged, take more courses, as well as process information effectively and ultimately perform well.

Almost similar results surfaced as regards students' satisfaction with ECD MOOC's modules presentation of content, with 78% (554) of them indicating that they were "extremely satisfied" with the presentation of the course content, while 21% (152) stated that they were "satisfied," whereas a small percentage (0.6%, 4) were neither satisfied nor dissatisfied. One student commented that *"I love the combination of short video lectures... they're usually 5-10 minutes only. There are also in-video mini-quizzes which check my understanding of the content..."* (Male, 18). Another student shared that *"the approach of presenting the modules is very organized which makes it easier for us to connect and understand the lessons. The modules are related to each other...inside each module are short video lectures and readings and there are short 5-10 quizzes after each these video lectures and readings to check our understanding of the topics...For me, this style is easy to follow and helpful because it makes the concepts easier to understand..."* (Student 5)

The above findings suggest the importance of organizing course content for student learning, resonating with the findings of previous studies (e.g., Roksa, et al., 2017; Wang, et al., 2015) stating that encouraging students, enhancing their tenacity, raising their performance and grades, and supporting first-generation and low-SES students through clear course structure and instruction. These findings also confirm Gray and DiLoreto's (2016) observation indicating that course structure and organization positively impacts student learning, as well as that of Blaich et al.'s (2016) claim stressing the powerful role of instructional clarity and organization in promoting student growth on education outcomes.

Another MOOC aspect which yielded "extremely satisfied" results from the students is variety of activities, with 535 responses or 75%. Students cited the usefulness of combining video lectures with in-video quizzes, readings, short multiple-choice type quizzes that are automatically graded, peer-to-peer grading where MOOCers evaluate and grade themselves, online discussion forum, and embedded online note-taking form in understanding the concepts tackled in the module and noted that the diversity of inputs ignited their interest in the material and sustained their engagement. This was elaborated by one of the students:

“I appreciate the different activities that we had to do such as watching short video lectures, reading short articles, responding to mini quizzes, and doing assessments with peer feedback because they help me learn deeply while engaging with the lesson and my classmates...” (Student 1)

Table 1 below presents the different activities for each module including video lectures, readings, and quizzes. The variety of media-rich content in the ECD MOOC may facilitate active learning among students which improves their engagement, and as a result of active learning, students may have improved attitudes, and their thinking and writing may also improve (Bonwell & Eison, 1991). Moreover, this may help facilitate retention of material among students, motivating them for further study and developing thinking skills. For example, video lectures were observed to effect positive influences in the improvement of student performances (Retumban, et al., 2018), while online reading articles were found to increase amount of reading, improve speed of reading, improve skimming ability, and multitasking (Hooper & Herath, 2014).

Table 1. English for Career Development (ECD) Course Content

Modules	Video Lectures	Required Readings	Quizzes
1 – Entering the Job Market	15 (Total 51 min)	12	14
2 – Resumes	15 (Total 50 min)	12	15
3 – Writing a Cover Letter	11 (Total 47 min)	9	12
4 – Networking	8 (Total 24 min)	9	7
5 – Interviewing for a Job	10 (Total 31 min)	8	7

With 536 responses (75%), the MOOC aspect on “directions provided” also received an “extremely satisfied” feedback from the students, noting the clarity of instructions provided in every task in the ECD modules, as indicated in one of the participants’ remarks: *“The instructions are written in simple English, easy to understand and follow...”* (Student 3). This finding is an important reminder to educators to simplify and concretize task instructions communicated with the students so that they are able to comprehend the task demand properly and produce correct, accurate, and appropriate outputs. This is particularly important in flipped learning setups where teacher presence and availability are not immediately

accessible to the students. Cognizant that poor teaching, like bad instructions, can make students lost (Duquesne University, 2021), educators should strive to provide students clarity of instruction, as it has been linked with increase in student achievement, avoiding the Clear Only If Known (COIK) fallacy.

Finally, with 529 responses (74%), course length also received an “extremely satisfied” feedback from the student MOOCers, citing that the five-week duration of the five-module MOOC was just enough, not too short but also not too long to sustain their interest in the topics. With the flipped learning approach, the students were able to manage their own time in doing tasks asynchronously, with less pressure and demand from the teacher, as they were given ample time to finish one module each week. This finding was elaborated by one of the participants who stated that “...the five-week duration of the course is very manageable for me because it’s short enough to sustain my interest and long enough to give me the important concepts I need...” (Student 7). This finding is supported by literature on MOOCs, which suggests that effective MOOCs are usually six to ten weeks long, with shorter MOOCs contributing more to learner engagement, retention, and success (Rodriguez, et al., 2019).

Students’ perceived impact of MCBFL on their knowledge and skills

The MOOC camp-based flipped learning (MCBFL) was the emphasis of the five-week course, and when students were asked how they believed it had enhanced their knowledge and abilities linked to the job search process, they gave a good response. According to Figure 2, of the 711 responses, 59.2% (421) reported that they had significantly improved, 38.7% (275) indicated that they had improved, and 2% (14) shared that they had just slightly improved.

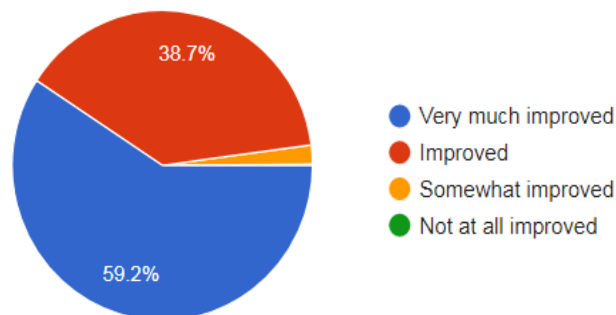


Figure 2. Students’ perceived improvement on their knowledge and skills after taking the course

Furthermore, the FGD data revealed three themes showing students’ perceived impact of MCBFL’s on their knowledge and skills. These themes are presented in Table 2 below together with some selected interview transcripts.

Table 2. MCBFL’s Impact on Students’ Knowledge and Skills

Themes	Transcripts
Future-readiness	<p><i>“With this setup [MCBFL], my mind was opened to the real world, as I learned to be familiarized with the things I need to know and to do immediately after I graduate... it made me aware about the world of work and reflect on my present capacity...”</i> (Student 3)</p> <p><i>“I’m very much thankful for this experience of taking a MOOC on ECD because it made me realize the importance of education in preparation for my future... This experience equipped me to be ready for my future and it also made me feel confident about what to do after graduation...”</i> (Student 6)</p>
Improved professional skills	<p><i>“I learned so many important skills that I know I can use soon such as writing an effective resume and cover letter, networking with people particularly prospective employers, and doing the job interview effectively...”</i> (Student 4)</p> <p><i>“This experience shaped my mindset to be professional, like how to write properly job application documents, how to dress, act and speak well during a job interview...”</i> (Student 2)</p>
Enhanced digital competencies	<p><i>“This MOOC camp made me realize that online learning can also be an effective way to learn... I also learned how to navigate a MOOC platform for the first time, how to participate in online discussion forum and submit my course requirements online...”</i> (Student 8)</p> <p><i>“I think my ability to watch video lectures, read online articles, and access the online modules have improved... I really love the fact that I can learn anytime and anywhere using my phone...”</i> (Student 7)</p>

The findings above highlight the potential of MCBFL to offer an effective teaching and learning approach mediated by technology, making anytime-anywhere learning possible for the students. Likewise, these findings show that a carefully chosen MOOC that is relevant to the needs of the students may result in positive gains in terms of students' knowledge and competencies.

Students' Perspective on MCBFL

Students provided an affirmative response when asked if they appreciated the idea of participating in the MOOC online and working with their peers on application and group projects. Only seven of the 711 responses (1%) 704) from respondents reported that they did not like it. As with other educational undertakings, using MOOCs in a mixed classroom presents issues and difficulties. The majority of students (54%) indicated that finishing the MOOC on time was their top worry. They reported that they were too busy with schoolwork to focus on the MOOC, so they only tried to 'insert' a small amount of MOOC-time into their busy schedule, implying that they eventually thought it interfered with their usual lessons. Low assessment score turnout was caused by the MOOC's tight deadlines for task completion and assignment submission. The issue of time difference also arose when students had trouble submitting their work since the system flagged it as past due. This is a significant issue because MOOCs are just an addition to the present class curriculum, requiring more effort from the students in addition to the usual class syllabus. These findings corroborate with the findings of previous studies underscoring the pedagogical potentials of blended learning (Israel, 2015; Jacoby, 2014) and MOOC camp-based flipped learning (Mabuan & Ebron, 2018). With MOOC integration, students are afforded opportunities to access international education, improve their technological competence and expand their global competitiveness. The study's participants claim that blended/hybrid learning enhances their language skills, particularly their writing and grammatical skills, fosters ongoing and independent learning, and provides them with the opportunity to access free, high-quality online education. Such findings support the results of previous studies (Comer & White, 2016; Hayes, 2015; Holotescu et al., 2014; Johnson, 2013; Zutshi, et al., 2013) which outline how MOOCs might be used to improve student outcomes through pedagogy.

The curating and/or creation of MOOCs that are specifically designed to be embedded with the existing classroom curriculum is another key challenge, in addition to the "access

problems” to MOOCs, in order to give students efficient, pertinent, and interesting online instructors and materials. Israel (2015) cited Bruff et al. (2014) who argue that “there are varying prerequisites and emphasis both in local face-to-face classes and MOOCs.” They added that coupling and coherence, two crucial factors that play a significant role in MOOC incorporation into conventional classroom settings, which they described as: “Coupling refers to kinds and extent to the kinds and extent of dependency between online and in-class components of a hybrid course whereas cohesion refers to the relatedness of the course content overall” (p. 195). Participants in this study also indicated that the accent, language, and tempo of the native English MOOC instructor occasionally caused communication breakdowns. The use of MOOCs by educators to create their own content and appear as MOOC instructors in the video materials for contextualized, understandable, and interconnected training may be implicated by this.

Students were asked to describe their experience with MCBFL, yielding 711 adjectives, which were used to create a word cloud, as shown in Figure 3 below.



Figure 3. Word Cloud Showing Students’ Perspective on MCBFL

The above wordcloud showcases students’ favorable attitude toward flipped learning. Students appear to like this novel learning experience, as evidenced by their use of terms like “amazing,” “awesome,” “knowledgeable,” “helpful,” and “challenging” to state a few. When asked why they provided such answers, students shared that the flipped classroom configuration gave them the opportunity to explore new learning opportunities, use their gadgets for educational purposes, and take charge of their own learning. Others in the class agreed that MOOCs are a fantastic way to continue learning because they make it fun, let you

practice using technology, and let you work on your language. Bruffet et al. (2013 in Najafi et al., 2014) also highlighted that face-to-face instruction helped students do well in their self-directed MOOC learning outside of class, giving them a continual chance for learning. They also stated that students responded well to their MOOC class integration experience. Students also claimed that MOOCs may help them improve their language and digital abilities and enable meaningful use of technology, as topics for MOOCs may strengthen learning and create conceptual links. They also thought that MOOCs could assist produce independent learners who learn actively without the frequent reminders from their teachers.

Furthermore, the qualitative findings are broken down into the benefits and challenges of taking part in the MCBFL. These findings were drawn from a total of 711 responses to open-ended survey questions, as well as the findings from the FGD and data from individual interviews. A keyword cloud was created using Voyant tools by analyzing and grouping together all 1,028 of the terms (see Figure 3). In particular, a graphical representation of the respondents' most popular terms is available (represented by decreasing font size, meaning the larger the text, the more frequent the word occurrence). Figure 3 demonstrates how the students saw the completion of the MOOC camp employing flipped learning as being advantageous to their personal growth.



Figure 3. Word Cloud Showing Students' Perspective on the Benefits of MCBFL

Moreover, some advantages might be anticipated, such as improved English proficiency, increased knowledge, and job advancement. The term cloud should be viewed cautiously, though, as it does not include any collocations, frequent occurrences, or potential meaning

changes. It would be more realistic to use a link or a collocates graph to emphasize the relationships between the frequently occurring terms.

The top five keywords were also shown visually. In order to visualize the frequency and distribution of the five primary keywords, Figure 4 displays bubblelines and word trends. The top five most popular search terms are: help (n = 17), career (n = 21), knowledge (n = 21), English (n = 19), and development (n = 22). A total of 100 occurrences were noted. For clarification, a trend chart indicating the frequency of phrases in the segments is also provided for the five core keywords. The results show that there are multiple clusters (dashed circles) where related terms are found together, revealing underlying themes.

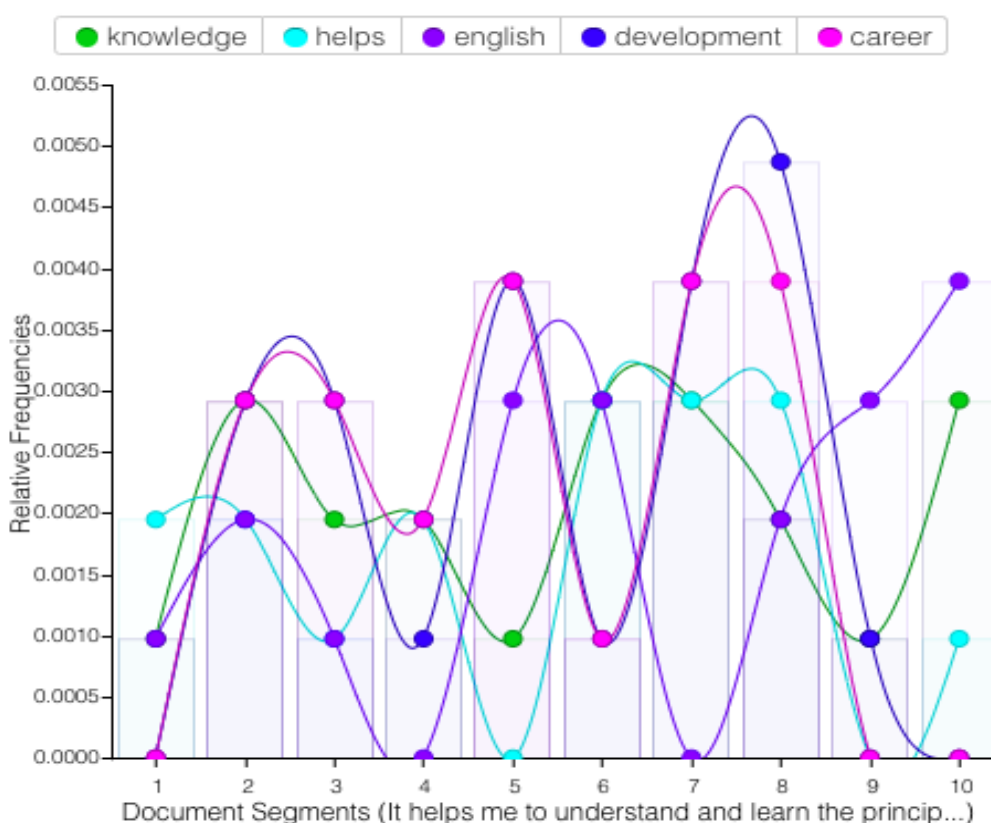


Figure 4. Graphical Representation of the Frequency of Occurrence for the Five Main Benefits of MCBFL

In Figure 5, the five main benefits of MCBFL are linked in a collocates graph. Linked keywords indicate how they are clustered together in the text (thicker lines signify higher occurrence), thus indicating underlying themes. Findings suggest three emerging benefits of MCBFL together with some actual quotations from the individual interviews:

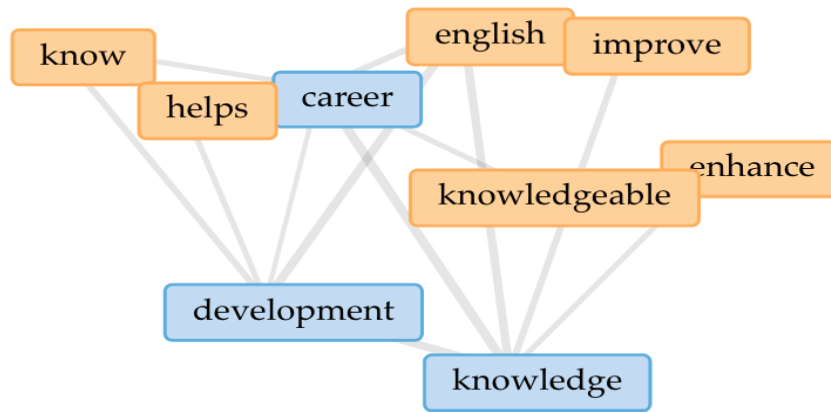


Figure 5. Interrelationships and Extended Links among the Main Benefits of MCBFL

The students reported that the MCBFL with the MOOC on English for Career Development is a significant opportunity for them to learn more about the job search, application, and interview process as well as about exploring a global career path, all while expanding their vocabulary and enhancing their language skills to achieve their professional goals.

“I really love my experience with the MCBFL because it gave me an opportunity to learn so many things about the job search process and the necessary communication skills...” (Student 5)

“This learning journey is overloaded with a lot of useful information that I could use to better prepare for my future job hunt such as writing a resume and cover letter and answering job interview questions well...” (Student 9)

Furthermore, the students view their MCBFL learning experience as a significant input for their own development as future professionals.

“My participation in the MCBFL surely taught me what I needed to prepare if I plan to enter the world of work after college graduation...this learning experience did not only help me improve my English language communications skills but it also helped me understand the preparations I need for my future career...” (Student 3)

Finally, students reported that the MCBFL helped them understand important concepts such as career and the ways in which it can be prepared for and pursued.

“Before this MCBFL, I never thought of building my career seriously because I thought it is only for graduating students, but I realized that I need to prepare for my future career now by understanding the nature of the job search process...” (Student 7)

The word ‘career’ for me is intimidatiding and before MCBFL I was still clueless how I could get one. But this class activity taught what exactly I needed to learn most especially how to write an effective resume and cover letter, and how to prepare for job interviews and to answer the questions confidently... “ (Student 4)

It is worth noting that the students in this study highlighted increasing one’s knowledge base being a key benefit for taking MOOCs. This finding is underscored by the literature on MOOCs with advantages that include access to courses designed by field specialists from global top universities (Bodenham, 2019), opportunity to connect openly on a global scale with global learners (University of Toronto, 2022), and broadening of learning time and space and increase of knowledge through autonomous learning (Du & Qian, 2021), among others. In the current era of Industry 4.0 where knowledge is highly regarded as the currency of the globalized world, MOOCs open pathways to learning and knowledge building previously unafforded to our learners, enabling global learners flexible mechanisms for accessing information in a 24/7 timeframe, and affording anyone equifinality to increase their knowledge in order that they do not only become *future-ready* but also *present-prepared*. Meanwhile, the challenges were also drawn based on the responses, as shown in the word cloud below:



Figure 6. Word Cloud Showing Challenges Encountered by the Students during MCBFL

Figure 6 suggests that some challenges encountered by the students while participating in the MCBFL include time, Internet access, and participating in the job interview, among others. However, as aforementioned, because the word cloud lacks any collocations, frequent occurrences, or possible meaning shifts, it should be interpreted with caution, so the data is also expressed through a link or collocates graph in order to visualize the frequency and distribution of the keywords. Figure 7 shows bubblelines and word trends, indicating the top five most popular search terms: time (n = 21), Internet (n = 11), job (n = 8), interview (n = 8), and resume (n = 7), totaling 55 occurrences (though *job interview* can be counted as collocate), resulting in multiple clusters (dashed circles) showing interrelated terms and underlying themes.

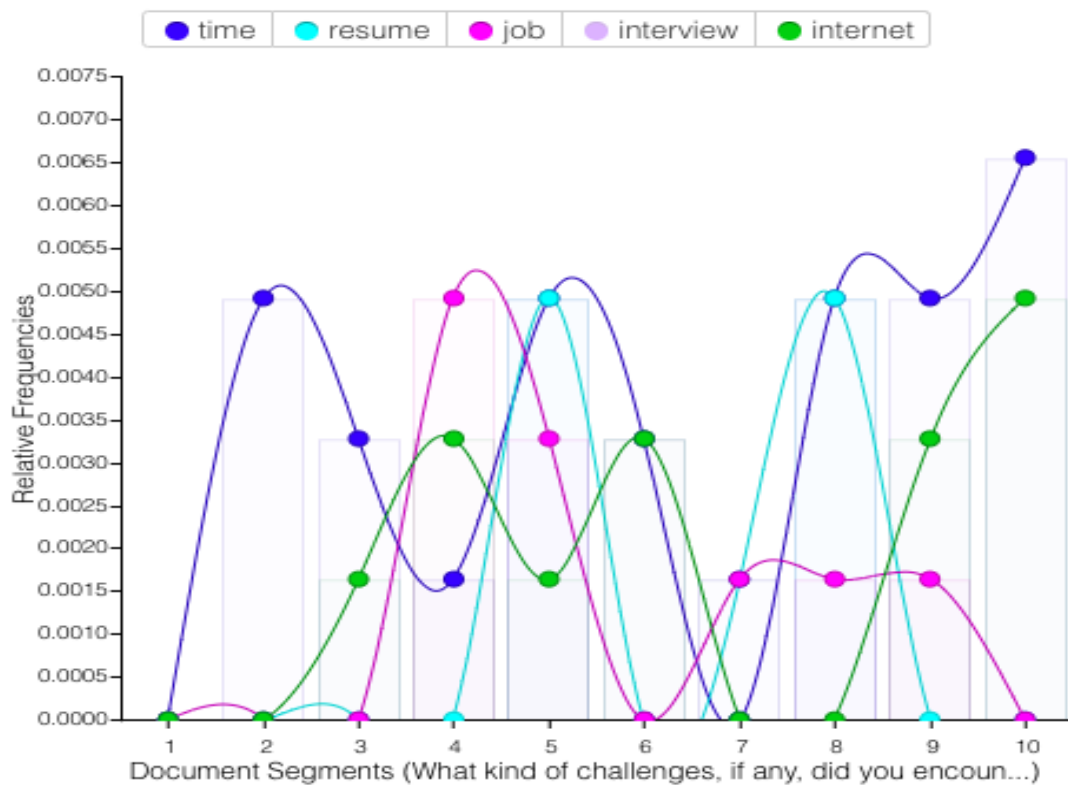


Figure 7. Graphical Representation of the Frequency of Occurrence for the Four Challenges Encountered by the Students during MCBFL

The five challenges of MCBFL are connected in a cluster graph in Figure 8. The underlying themes are revealed by linked keywords since they show how they are grouped together in the text (thicker lines imply higher recurrence). Findings suggest three emerging challenges of MCBFL, along with some quotes from the individual interviews:

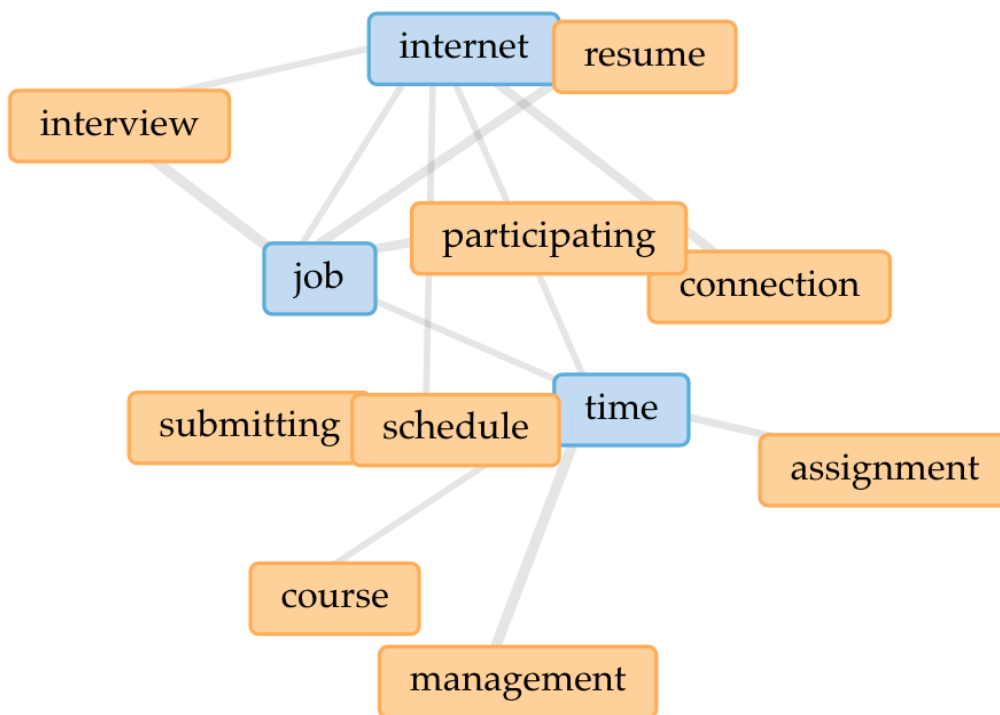


Figure 8. Interrelationships and Extended Links among the Challenges Encountered by the Students during MCBFL

While the students reported several benefits of doing MCBFL, they also reported some technical and learning challenges that came with it, as it was a novel activity that they accomplished for the first time. Below are some avowals from the students delineating such challenges, particularly the need for more time as well as time management:

“My major concern I had with MCBFL is that it was very demanding of my time since I had to watch several video lectures of the ECD modules in Coursera at home.”
(Student 8)

“I needed to improve my time management skills since I had to finish watching video lectures weekly, answer online quizzes, and submit required outputs...” (Student 10)

Another concern reported highlighted weak Internet connectivity or lack of Internet access at home, which was necessary to complete the modules and accomplish the online assessments:

“Our Internet connection at home is weak and slow, which prevented me from downloading and even watching the video lectures in Coursera...” (Student 2)

“We don’t have yet a Wi-Fi at home, so I just bought Internet data, or went to a computer shop just to watch the video lectures. It’s hassle because I sometimes went

out at night and went home late from the pc shop, which made my parents worried about my safety... ” (Student 5)

In addition, students also showed concern about their lack of confidence in their oral communication skills, particularly in their participation in the job interview simulation which the teacher required as an application activity of the MOOC camp:

“The job interview activity in our class was nerve-wracking because I couldn’t express my thoughts in a very organized manner... ” (Student 1)

“Although we were given tips on how to ace the job interview, I struggled during the activity because I could not speak English spontaneously... I also need to improve my nonverbal skills... ” (Student 6)

Finally, some participants likewise shared their diffidence in writing an effective resume for their future job interview:

“I appreciate that there are many tips and strategies for writing a resume in the video and in our class discussion but I think I still need to internalize everything because I sometimes forget the important principles in writing an effective resume... ” (Student 4)

“I honestly did not know how to write a resume and what to include in it, so my first output was terrible... but I started to learn about it because of the MOOC... ” (Student 7)

Of the challenges reported, it is worth addressing the elephant in the room – the Internet access – which could singlehandedly disrupt openness that MOOCs promise to deliver to the world. Such is a global concern as Muller and Aguiar (2022) of the Internet Society reported that the digital divide, that is, “the gap between those who have and do not have access to computers and the Internet” (van Dijk, 2006), is multifaceted and leads to disparities in Internet access including availability, affordability, quality of service, relevance, and additional divides. To date, according to UN’s Broadband Commission for Sustainable Development by the International Telecommunication Union (2020), 3.6 billion people remain totally unconnected to the Internet by any measure, which is a serious concern because the digital divide exacerbates other divides, as digital exclusion has many adverse impacts including educational opportunities, where lack of Internet access means that our

learners are denied the educational benefits of the Internet. While our world is moving fast and transforming in leaps and bounds, our governments should not remain deaf and blind to their obligations to their people by providing infrastructural support in order to enable seamless connectivity for their ubiquitous learning and sustainable development.

Conclusion

Exploring the pedagogical viability of MOOC camp-based flipped learning (MCBFL), this study found that the English for Career Development (ECD) MOOC integrated into a Purposive Communication course under Communication for Work Purposes received excellent response from the students about MOOC features including module subjects, how the course information was presented, the variety of activities, the directions given, and the length of the course. Students also claimed that MCBFL improved their present-preparedness, future-readiness, professional skills, and digital competencies, amid concerns on time constraints and technological access.

With their ability to offer open, quality and accessible education for anyone, anytime and anywhere, MOOCs are an inevitable force to reckon with in the ever-changing educational landscape across the globe. With MOOC camps, the MOOC power is ignited to bring together the affordances of personal and group learning, thus facilitating personal learning environments and mediating community learning among students. With flipped learning, MOOC camps offer possibilities we have never been afforded before and open a world of wonders cognizant educators can peek through and ride on. MCBFL may be new, yet its pedagogical potential is promising, inviting everyone to see education in another light.

Time has already tested our traditional approaches, and whether we deem it enough or lacking, is up to us for the telling. But the world is changing, and it is changing rapidly and unceasingly, with new demands, challenges, and promises. Technologies sprout everywhere, inviting us to try the new and to explore the unknown. Unconventional teaching and learning approaches appear to complement, if not challenge, the age-old traditions we used to embrace, and it is up to us to make bold and wise decisions to welcome these new paradigms or shut them down as yet another set of educational fads. In our current era of Industry 4.0 with Internet of Things and Internet of People amid the backdrop of the VUCA world where things appear to be volatile, uncertain, complex, and ambiguous, educators have to face the fact that technology-mediated teaching and learning is no longer a must-try but a must-have, as we cannot operate in our classrooms today with the mindset of yesterday.

Some limitations for this study should be noted. First, this study used only one specific MOOC and implemented a MOOC camp-based flipped learning for only five weeks among freshman undergraduate students. Hence, the findings presented here may limit their external validity to other MOOC-related studies elsewhere. Future studies may explore MCBFL in other contexts and settings, taking into account the type of students, MOOC to be integrated, digital readiness and competence of both the teacher and the students, and availability of technological resources, among others. Finally, future studies may also investigate MCBFL in other subject areas and education levels, employing quantitative and qualitative research designs to determine gains in student learning outcomes.

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Chapter 9 - The Excellent CSR Companies' CSR Communications in Social Media in the early COVID-19 Era

Kyung Jung Han 

Chapter Highlights

- This study examines how the top-rated companies in corporate social responsibilities (CSR) are executing COVID-19 related communications in social media, considering COVID-19 as a global pandemic.
- Top CSR companies were more proactive in COVID-19 communication but less active in CSR communications than lower-ranked companies with a limited social media presence. Leading CSR-rated companies prioritized health, community involvement, space sharing, behavior changes, and customer care in their communications, focusing on informative rather than persuasive messaging about COVID-19.
- This study contributes by comparing and contrasting existing research on crisis management and CSR-related communication, even incorporating social media. In the context of an unprecedented global pandemic, it provides valuable insights into how companies navigate the crisis and engage with their customers. The identified purpose and topics offer a foundation for scholars to conduct future studies, examining the specific impact of social media communication on attitudinal and behavioral outcomes.
- Inspired and modified by prior studies with mixed results on CSR communication effectiveness in a crisis, this study contributes to existing theories. It sets the groundwork for future studies with a categorized infrastructure, examining purposes and types of COVID-19 communication from a CSR perspective.

Introduction

With the worldwide spread of the COVID-19 pandemic, we manage the new normal from wearing a mask daily to working at home for many. Like other global events, COVID-19 changed many things around us in terms of how we see the world and how we think (He and Harris, 2020). Not only just as a regional mental health issue (Zhong et al., 2020), it involves health inequity, the climate crisis, and collective trauma to a family or a community (Watson et al., 2020).

In the middle of such changes, the role of social media becomes more important as it can support monitoring outbreaks and public opinion during a crisis to support crisis management and health information dissemination (Abd-Alrazaq et al., 2020). Besides, changes in social media usage are found. For example, the peak time to post on social media has been changed from specific weekdays to just weekdays simultaneously, and there is more traffic on Fridays, so overall engagements per day increased (Elizabeth, 2020). As the COVID-19 pandemic represents one of the most significant environmental changes in recent decades, it can affect corporate social responsibility (CSR), consumer ethics, and behaviors (He and Harris, 2020). Not only for the publics' side but also companies', they must take risks like "uncertainty".

As a preliminary study on CSR communications during the global pandemic, this study reviewed previous studies (Colleioni, 2013; Du et al., 2010; Lee et al., 2013) about the pros and cons of CSR communications through social media in general and correlation with a crisis event (Cheng et al., 2019; Kim and Lee, 2015; Oh et al., 2017). Adding to this process, the current study seeks to fill the gap between previous studies on CSR communication via social media and the impact of the global disaster on organizational CSR communication execution. This study examines how the original excellent CSR companies handle this global pandemic and what they care about CSR in communicating with publics through content analysis with the top CSR companies' social media communication.

Conceptual Backgrounds

CSR and CSR Communication

Corporate Social Responsibility

Corporate social responsibility (CSR) is a firm's responsibility to society (Coombs, 2019).

CSR is sometimes replaced by sustainability, philanthropy, or good citizenship. Although there are discrepancies in definitions between scholars and professionals, they agree to the value of making additional efforts to promote both business success and social well-being (Cho et al., 2017). CSR activities expect to have more favorable stakeholder attitudes and better support behaviors and build a better corporate image and positive stakeholder-organization relationship (Du et al., 2010).

CSR could be driven by either altruistic or intrinsic motives (Coombs, 2019). Cause or motive—why companies engage in CSR is a primary interest of publics rather than what they are doing (Klein and Dawar, 2004). Besides, matching the fit between an organization and cause is important in regard to corporate products, brand, image, mission, value, and so on (Gaither and Austin, 2016). In other words, CSR activities should be consistent with their corporate values with similar target audiences (Gupta and Pirsch, 2006). Without such a plan, CSR communication is likely to fail.

CSR Communication

CSR Communication defines a firm's internal and external communication for stakeholders about its contribution to society, environment, and economic development (Rasche et al., 2017). CSR communication increases stakeholders' awareness of a firm's CSR activities (Lee et al., 2013). Generally, the awareness of an organization's CSR activities for external stakeholders and even internal stakeholders is low. They might turn to negative when the company promoted their CSR activities excessively (Du et al., 2010). That is, stakeholders' evaluation of CSR activities might not always be positive (Colleoni, 2013) when it is related to the corporate benefits directly or indirectly. For this reason, rather than self-serving CSR communication, when an organization and its stakeholders contribute together, it could be more beneficial (Coombs, 2019; Lyon and Maxwell, 2011).

CSR Communication through social media

CSR Communication in social media

Based on the suggestion mentioned above to create collaborative content to increase awareness of CSR activities through CSR communication, social media will be the best place where organizations and stakeholders can naturally interact about CSR. Through this,

organizations can figure their stakeholders' social expectations (Colleoni, 2013). Organizations can also reach out to much broader audiences, including both well-known groups and even anonymous groups of “friends” and “followers” (Freeman and Moutchnik, 2013).

Social media communication has three characteristics: a place for interaction, uncontrolled media, and easily approachable media (Etter, 2013; Lee et al., 2013). That is, a company can build and maintain relationships with its stakeholders. However, there are challenges for the company due to user-generated content and approachability for anyone. Not only can it cause a positive viral effect, but it also can trigger a negative effect. Hence, it is important to manage CSR communication effectively in social media, minimizing any unintentional misunderstanding by stakeholder groups.

Online Presence of CSR Activities

Online presence is understandable by “social presence” first. Social presence, defined as “the degree of salience of oneself as he/she interacts with other people (Short et al., 1976). In particular, degree of salience means “quality or state of being there” (Short et al., p.206). Thus, when it comes to an individual, it refers to “the ability of the participant in a community of inquiry to project his/her personal characteristics into the community, thereby presenting oneself to other participants as real people” (Garrison et al., 2000, p.89). From the original social presence theory, it took on new importance with computer-mediated communication (Lowenthal, 2010). Online presence is the combination of online and social presence, and it is measured by all social interaction and connection between people.

For organizations, their online presence will be disclosed by how closely they communicate with stakeholders for effective relationships. The interactive behavior of organizations in social media can include two communicative actions: approaching social media users in a proactive way and answering questions in a reactive way (Etter, 2013). In reality, it is hard for organizations to manage CSR communication smoothly due to time and staff limitations (Briones et al., 2011). Moreover, some companies hesitate to interact with their stakeholders about CSR issues (Etter, 2013) due to risk causing negative connotation, so-called stakeholder skepticism (Farooq et al., 2013).

CSR Communication during a Crisis

Crisis Management and Attribution of the Crisis

According to Situational Crisis Communication Theory (SCCT) by Coombs (2007), “a crisis is a sudden and unexpected event that threatens to disrupt an organization’s operations and poses both a financial and a reputational threat” (p.164). In crisis management, attribution of the involved crisis is considered. Attribution Theory deliberates the causes of events (make attributions), especially those that are negative and unexpected (Weiner, 2018). Depending on the cause of a crisis event, such as human error, controllable, uncontrollable, and so on, the severity of a crisis is varied. The priority in any crisis is to protect stakeholders, not the organizational reputation, as ethical responsibility for crisis response (Coombs, 2007).

CSR Communication as a Part of Crisis Management

Although there are pros and cons in CSR communication during a crisis, as reasons mentioned above, CSR communication through mobile devices sometimes plays a critical role in crisis relief when people have limited access to essential and real-time information (Lev-on, 2012). Corporations are required to find appropriate strategies to give the right response at the right time. According to Wilcox and Cameron (2009), crisis management is divided into four phases of lifecycle: proactive, strategic, reactive, and recovery. Although boundaries between phases are not strict, most CSR communication is executed in either proactive or strategic phases. Nonetheless, depending on whether companies are voluntarily communicating on their CSR activities or whether their communication is resulting from external needs (Oh et al., 2017), identification of either proactive or reactive is determined.

Like the nature of CSR communication in general as a double-edged sword, CSR communication during crises can affect both positive and negative. In Kim and Lee (2015)’s study, they found a buffering effect of CSR activities during a corporate crisis regardless of issue attributes of either a company’s CSR activities or the involved crisis. It shows how companies are aware of the risks of careless CSR activities and communication during a crisis. Meanwhile, Souto (2009) emphasized the link between CSR and the crisis. In other words, CSR could reinforce business strategy when CSR activities have “special relevance in periods of crisis” (Souto, 2009, p.24).

COVID-19 and CSR Communication through Social Media

With such ideas, COVID-19 can be considered as a global crisis affecting various publics. It is an unprecedented crisis and is an ongoing crisis. Applying Coomb's crisis attribution (2007), COVID-19 is counted as a natural disaster by the Victim cluster. The organization is also a victim of the crisis, so the organization has weak attributions of crisis responsibility with a mild reputational threat. On the other hand, the COVID-19 crisis is also identified as a crisis event. Crisis events include natural and technical disasters, terrorist attacks, international conflict, global pandemics, and so on (Pan and Meng, 2016).

However, it is hard to ignore the impact of the global pandemic as threatening global health chaos (Chan et al., 2020). Amid the Covid-19 crisis, social media users are playing a significant role in information dissemination (Islam et al., 2020). However, prescreening from healthcare providers is required in the information exchange in social media (Chan et al., 2020). So far, organizational communication using social media is optimistic as it promotes the publics' engagement during the COVID-19 crisis (Chan et al., 2020; Chen et al., 2020). Social media communication is regarded as a catalyst to enhance publics' abilities in understanding the current situation and solving problems together (Chen et al., 2020).

Nevertheless, there are many challenges here. Many organizations are not skillful enough to promote citizen engagement, but they regard social media as just a tool for information dissemination. Besides, they do not have enough staff to handle social media to encourage publics' engagement (Chen et al., 2020).

RQs and Hs

Because there are many uncertainties about the COVID-19 crisis event, it is hard to hypothesize certain logics between variables. However, there is no doubt that the positive effect of CSR communication relating to COVID-19 in social media serves community needs in crisis relief and information dissemination to protect stakeholders of all the organizations.

Referring to Lee et al. (2013)'s study and pros and cons on the benefit or risk of CSR communication during a crisis, this study suggests the following hypothesis and four research questions:

H1. Firms with higher CSR ratings will be more proactive in adopting social media at

the early stage of COVID-19 than those with lower CSR ratings.

RQ1. Do Firms with higher CSR ratings show more COVID 19-related communications than other topics in the age of COVID-19?

RQ2. Do Firms with higher CSR ratings show more online presence through COVID 19 related posts than others?

RQ 1 and 2 were modified from Lee et al. (2013)'s hypothesis, considering a mixture of variable relations between positive vs. negative effects of social media and CSR communication. In detail, in previous studies, negative effects of excessive CSR communication (Du et al., 2010), an important connection between the crisis and organization (Souto, 2009), and delayed effects of CSR activities during a crisis (Kim and Lee, 2015) were found. Hence, this study opens the possibility of more or less performances through social media about CSR activities of organizations. It is the same for online presence. Online presence supports to increase awareness of CSR activities, but it is unknown how it goes during a global pandemic for consequential attitudes toward organizations. It will be promising in promoting information dissemination. Still, many organizations are also victims of the crisis with a lack of staff and knowledge to accommodate CSR communication relating to the COVID-19 global pandemic.

Additionally, to examine the nature of CSR communication relating to COVID-19, this study will investigate two more variables:

RQ3. What types of CSR topics are mentioned in their post for top CSR-rated companies?

RQ4. What is the purpose of the post relating to COVID-19?

In particular, the purpose of CSR communication (RQ4) is relating to identifying the motives of CSR communication (Cheng et al., 2019; Cho et al., 2017): altruistic or intrinsic motive and the type of communication strategies (information, response, and involvement) (Colleoni, 2013). Because of the limitation in adopting those studies' variables directly to this study, the purpose of the pose only was examined to understand the property of COVID-19-related communication from the Top CSR-rated companies.

Methods

Sample and Data

To reflect the most recent data in determining the top CSR companies, this study adopted 3BL Media's The 100 Best Corporate Citizens in the United States, based on fundamental environmental, social, and governance (ESG) transparency. According to 3BL Media (2020), they considered 141 ESG factors across eight areas (e.g., climate change, employee relations, environment, ESG performance, financial, and so on), but COVID-19 responses-related factors were not included this time because the ranking counts the time period between March 6, 2019, and March 13, 2020.

Table 1. The List of Companies Excluded for Data Collections from Facebook

	<i>Companies (ranking)</i>	<i>Note</i>
Excluded companies	IBM (71), Nike (19), Ventas (32), The Hersey Co (34), Campbell Soup Co. (35), Weyerhaeuser (52)	Stop updating or no post relating to COVID-19
	Healthpeak Properties (44)	No Facebook account
	CMS Energy (95)	
	General Mills (3), HP (5), Intel (6), Accenture (10), Microsoft (14), Baxter (23), Air Product & Chemicals (26), Kellogg Co (30), VF Corp. (33), Hasbro (38), Hilton (39), BNY Mellon (40), Gap, Inc (42), Stanley Black & Decker (45), Best Buy (46), Abbott (54), NortonLifeLock (56), Estée Lauder Companies(58), Sempra Energy (61), Edwards Lifesciences (66), The Hartford (72), Advanced Micro Devices (76), Target (89)	Fewer than 30 posts relating to COVID-19 between March and May
	Texas Instruments (96), ManpowerGroup (97), Qual Comm (98)	

Note. Ranking in the parenthesis.

To measure the relevance between CSR rankings (See <https://100best.3blmedia.com/>) and social media performances during COVID-19, all the top 100 companies were considered for

data collection this time. Systematic chronological sampling is applied for the data collection, but this unprecedented crisis event did not analyze them with a comparable number of posts. Thus, due to inactivity, fewer posts relating to COVID-19 were set for this study time period (March to May). In the final sample, 92 companies were included (Table 1) and 1,593 posts, released between March and May, were content analyzed by a study protocol with three trained coders.

Independent Variables

CSR ratings. By aforementioned, The 100 Best Corporate Citizens ranking, overall weighted score (in two digits) from <https://100best.3blmedia.com/> was directly applied as “CSR ratings” for this study.

Types of CSR Topics. Based on Chae and Park (2018)’s CSR topics in general and manually added items relating to COVID-19, CSR Topics were investigated. For example, from community involvement, health, and ethics to mask sharing, food distribution, customers care during COVID-19, and so on are included as CSR Topics to consider direct and indirect CSR posts amid the COVID-19 crisis.

The purpose of a COVID-19 post. It considers six options for this variable: persuasive (event participation), persuasive (share their post), persuasive (follow safe COVID guidelines), informative (company promotion, event, policy changes, new updates-relating to COVID-19), informative (general COVID-199 related information: scientific, facts, cases, etc.), and others.

Dependent Variables

Proactive on social media. Using Wilcox and Cameron’s (2009) crisis life cycle: proactive-strategic-reactive-recovery crisis as a foundation framework, this study operationally defined “proactive” as a posting action before each company is affected by the global COVID-19 crisis event. The first date of COVID-19 related posts will be counted as a “proactive” action.

COVID-19-related Communication. When searching for appropriate data, keywords search was applied such as “coronavirus”, “COVID-19”, “challenging time”, “mask”, “difficulties”,

etc. and manually selected each sample under the keywords whether it is directly related to COVID-19 or not. To compute the degree of “COVID-19-related communication”, the average ratio of COVID-19 posts divided by the total number of posts between March and May was considered.

Online Presence. Inspired by Lee et al. (2013)'s research and modified, this study operationally defined “online presence” as to how audiences recognize organizational presence online and drive them to leave reactions, replies, and shares. Not just posted by an organization but actually responded to by stakeholders' engagement on social media communication, online presence will be counted for the degree of online presence. After weighing three indexes (reactions, replies, and shares) equally, the sum of three items was used as “online presence”.

Statistical Analysis

To test a hypothesis and four research questions, bivariate regression analysis and analysis of variance (ANOVA) were conducted using IBM SPSS Statistics Version 24.0. Before testing the main sample, intercoder reliability was measured. Cronbach's Alphas for 13 items analyzed for this study were 0.91 on average.

Results

CSR Ratings as a predictor for more Proactive COVID-19 communication in social media

As shown in Table 2, higher CSR ratings determine more proactive COVID-19 communications in social media ($F=14.57$, $df=1,1573$, $p<0.001$). As the result of analyzing the effect of CSR ratings on more proactive COVID-19 communications in social media, CSR ratings predict more proactive COVID-19 communications in social media ($\beta=-.298$). That is, as CSR ratings higher, the companies were more proactive or shared COVID-19 related posts earlier than lower-ranked companies, $M(\text{First COVID post})=322.11$ (or March 22, 2020), $SD=68.51$, $N=1575$. H1 is supported.

Table 2. The Results of the Bivariate Linear Regression Analysis between CSR Ratings and the First Date of Social Media Posts

	<i>Standardized Coefficients Beta</i>	<i>t</i>	<i>Sig</i>	<i>df</i>	<i>F</i>	<i>R²</i>
CSR ratings	-.298	-3.818	.000	1, 1573	14.57	.540

Table 3. The Results of the Bivariate Linear Regression Analysis between CSR Ratings and COVID-related Communications

	<i>Standardized Coefficients Beta</i>	<i>t</i>	<i>Sig</i>	<i>df</i>	<i>F</i>	<i>R²</i>
CSR ratings	-.800	-3.140	.002	1, 1531	9.862	.600

Table 4. Correlations between CSR rating, March, April, and May posts, and Mean Posts of the Three Months

	March M	April M	May M	Mean Post	CSR Ratings
March M	1.0				
April M	-.180**	1.0			
May M	-.330	.760**	1.0		
Mean Post	.956**	.850**	.253**	1.0	
CSR Ratings	-.940**	.117**	.100	-.800**	1.0

**p<0.001

CSR Ratings as a predictor for COVID-19 related communication

As shown in Table 3, higher CSR ratings lead to less COVID-19 related communication in social media (F=9.86, df=1,1531, p<0.01). As the result of analyzing the effect of CSR ratings on more COVID-19 communications in social media, CSR ratings predict less COVID-19 communications in social media (beta=-.800). As CSR ratings higher, the companies were less active in posting COVID-19 related messages, M(COVID-19 Posts)=72.22, SD=121.00, N=1533. The mean value is the average of the posts in three months from March to May. Additionally, to investigate changes between months, COVID-19 related posts in each month were analyzed (See Table 4). In March, higher CSR ratings were negatively related (beta=-.940); in April, higher CSR ratings were positively related

(beta=.117); and in May, higher CSR ratings were positively related (beta=.100), but not significant. Higher CSR-rated companies were less active in March but more active in April, and not different in May. However, higher CSR-rated companies were less active in posting COVID-19 related messages than in the early COVID-19 era (RQ1).

CSR Ratings as a predictor for online presence

As shown in Table 5, higher CSR ratings lead to a less online presence in social media through COVID-19 related posts (F=8.27, df=1,1466, p<0.01). As the result of analyzing the effect of CSR ratings on online presence through COVID-19 communications in social media, CSR ratings predicts less online presence through COVID-19 communications in social media (beta=-.750). That is, as CSR ratings higher, the companies showed online presence less than others through reactions, replies, and shares; M(online presence)=5.74 (weighted values from the number of reactions, replies, and shares) SD=15.07, N=1468 (RQ2).

Table 5. The Results of the Bivariate Linear Regression Analysis between CSR Ratings and Online Presence

	<i>Standardized Coefficients Beta</i>	<i>t</i>	<i>Sig</i>	<i>df</i>	<i>F</i>	<i>R²</i>
CSR ratings	-.750	-2.876	.004	1, 1466	8.270	.415

The Type of CSR Topics and the purpose of COVID-19 related posts by the TOP CSR companies

As shown in Table 6, health, community involvement, community space opening for COVID-19 related works, motivating posts for good habits and positive behavioral change, and customer care were the top five topics. For the following list, check Table 6 (RQ3).

In regard to the purpose of the COVID-19 posting (See Table 7), informative purposes were dominant than persuasive purposes of encouraging customers to share information, participate in any events, and follow their guide (RQ4).

Table 6. Frequency and Percent of CSR Topics Posted by the Top CSR-rated Companies

Topic	<i>Frequency</i>	<i>Percent</i>
Health	795	17.4
Community involvement	570	11.9
Community space opening for COVID-related works	343	7.5
Good habits and positive behavioral change	320	7.0
Customers Care	318	7.0
Poverty/Financial Support	249	5.5
Employees Care	239	5.2
Equity	220	4.8
Education (external publics)	213	4.7
Ethics	179	3.9
Work-life balance	152	3.3
Environment in general	120	2.6
Mask Producing	115	2.5
Nutrition	100	2.2

Table 7. Frequency and Percent of the Purpose of CSR-related Posts by the Top CSR-rated Companies

Topic	<i>Frequency</i>	<i>Percent</i>
Informative: COVID-related info.	550	34.5
Informative: Company promotion	471	29.6
Persuasive: Share their post	230	14.4
Persuasive: Event Participation	201	12.6
Persuasive: Follow safe COVID guides	140	8.8
Total (missing)	1593 (1)	100 (.1)

Discussion

This study aims to open discussion on the role of CSR communications during the global pandemic. For this, the literature on CSR communications in social media and their effect was reviewed with a crisis event as an important context. Applying the conceptual and theoretical discussions on the CSR communication effect and a crisis (i.e., COVID-19)

involving consequential variables such as situation, attribution, and so on, a content analysis was conducted with interactive communications between companies and customers in social media. The findings are three-fold: 1) proactive communication by excellent CSR companies; 2) more active communication and stronger online presence by less rated CSR companies than the higher-ranked companies in CSR execution; and 3) investigation for CSR communication topics purpose of posts in social media.

First, excellent CSR companies were more proactive than other companies as they posted COVID-19-related messages earlier than others (H1). It implies that many excellent CSR companies are aware of the importance of proactive efforts (Cho et al., 2017) to both business success and general achievement, taking a corporate citizenship role.

Next, excellent CSR companies saved words as they have less communication activities (RQ1) and less online presence (RQ2) through interaction with customers. Although CSR communication has positive effects (Cheng et al., 2019; Lee et al., 2013), there are also negative effects or risks on the reputation by explicit CSR communication (Coombs and Holladay, 2012; Gaither and Austin, 2016; Lyon and Maxwell, 2011). The decision for excellent CSR companies were less active in social media to communicate about the uncertain global crisis event. In Etter's study (2013), low interactivity of CSR communication was assumed and supported about CSR issues. More interestingly, the excellent CSR companies posted on COVID-19 related CSR activities earlier than others, but they were more active in April than March. We may evaluate it as the excellent CSR companies' efforts to be careful in CSR communications in the early age of the global pandemic.

As a more preliminary result, descriptive analyses on the CSR-related communication topics and the purpose of communication were executed at the end (RQ 3 and 4). The result shows that the excellent CSR companies prioritized serving for external publics than internal publics or their business-related achievement in CSR communication amid COVID-19. Moreover, excellent CSR companies are more focused on information dissemination than persuasive communication. It is more suitable for CSR communication (Morsing and Schultz, 2006) and the purpose of social media interaction on CSR activities (Capriotti, 2011).

Theoretical and Practical Implication

In this study, some key concepts were applied, such as social presence, CSR communication

in social media, and global pandemic as a crisis event. To understand the context better, situational crisis communication theory (Coombs, 2007), social presence theory (Lowenthal, 2010), and attribution theory (Weiner, 2018) were addressed. Considering the severity of the unprecedented global pandemic, this study paid attention to the early period of the crisis event: the first three months—March through May 2020. This research could reaffirm the discussion made in previous literature on the suggestion for CSR communication and CSR communication during a crisis. Likewise, the last two preliminary research questions on the topic and purpose of CSR communication in social media could give additional resources in future studies about the effect of CSR communication with different CSR topics and purposes.

In practice, this study gives the trend and pattern of CSR communication during the global pandemic by excellent CSR companies. It can be an exemplar for social media communication specialists. They could figure out the popularity of CSR communications in social media. It can prevent any negative effect caused by misdirected CSR communication by companies.

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Chapter 10 - The Trends Internet of Things in Physical Education: A Scientometric Review

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Chapter Highlights

- This study aims to explore IoT trends in physical education.
- This scientometric review used SCOPUS and Web of Science (WoS) to search for articles, obtaining a total of 103 papers—64 from SCOPUS and 39 from WoS.
- This study used two scientometric software to analyze bibliographic data: ScientoPy and VOSviewer.
- This topic debuted on the Web of Science database in 2010, appearing on SCOPUS from 2016. Ji-Yun Cai and Ping-Ping Zhang stand out as the most influential authors, contributing 2 papers with 21 citations. The top paper, titled "A New Approach of Intelligent Physical Health Evaluation based on GRNN and BPNN by Using a Wearable Smart Bracelet System," is particularly impactful with 19 citations.
- Keyword analysis revealed the top five mentions: internet of things (IoT), physical education, cloud computing, college physical education, and artificial intelligence.
- Kyung Hee University, South Korea, contributed the most papers (3) among institutions and countries. In the top ten institutions, China played a significant role, leading in both the Internet of Things and physical education, with contributions from 7 institutions.
- The well-developed research on this topic, employing new methods, suggests that an in-depth exploration of IoT in physical education can identify gaps and advance knowledge for researchers and practitioners.

Introduction

Internet of Things (IoT) is one of the popular internet performance information technologies (Lei et al., 2021), which was created by Kevin Ashton in 1999 (Kassab et al., 2020), which refer to uniquely identifiable objects and virtual representation in structures, such as : internet (Han, 2011; Uzelac et al., 2015). This IoT concept became popular when the International Telecommunications Union presented the publication "The Internet of Things" (Szum, 2021). Today IoT has developed into a multi-layer technology platform that includes hardware, software, connectivity, and user interfaces to manage data flow, communication, application functionality, and device automation (Aazam et al., 2018; Lombardi et al., 2021). IoT is operated based on three basic functions of smart objects, namely traceability, communication, and interaction (Miorandi et al., 2012). The three basic functions of these smart objects play an important role in underlying the development of the Internet of Things which can be seen through current technology, for example one of the features on google map that is able to interact with humans to provide directions (Keerthana et al., 2020), and children activity tracking (Sravani & Ghosh, 2020).

Moreover, this technology has been proven its ability to provide benefit for both small- and large-scale networks, generating a huge portfolio of enabling hardware and software of varying complexity (Buratti et al., 2015; Garcia-sanchez & Garcia-haro, 2011). IoT applications have been used in various fields, such as agriculture (Ayaz et al., 2019), medical (Asghari et al., 2019; Ying Wang et al., 2018), retail (Đurđević et al., 2022), security system (Pinggui & Xiuqing, 2017), customer service (Jie et al., 2015; Yerpude & Singhal, 2021), smart house (Lee et al., 2016; Sung & Hsiao, 2020), environmental monitoring (Behera et al., 2020), transportation (Guerrero-ibanez et al., 2015), and industrial internet (Bahga & Madiseti, 2016; Wan et al., 2016). IoT has shown progress and entered the education system, as well as provided benefits for students, teachers, instructors, and the entire education system. IoT has been applied in monitoring student attendance and classroom activity (Alotaibi, 2015; Jiang, 2016), provided an attractive learning environment for students (Marquez et al., 2016), and increased the accessibility for students with disabilities (Bright, 2021).

The Internet of Things (IoT) is an interesting and stimulating topic that could intrigue students, teachers, and lecturers, while also providing an excellent platform especially in the

physical education subject. Physical education is an important subject in schools (Green, 2014; Stormoen et al., 2016), because it contributes significantly to spiritual, moral, social and cultural development (Cale et al., 2016; Harris, 2018), as well as student development (Akhter & Ahmed, 2021). The traditional method in teaching physical education was gradually being abandoned, and it was starting to change direction into smart method (Ding et al., 2021; Meng, 2021; Yu, 2021), such as using MOOC in physical education subjects for higher education level in soccer material (Tian et al., 2022), learning basketball using information technology networking through images, words, sound, video, and animation (Chen & Zhou, 2022), the provision of smart sports in universities as smart sports teaching resources, smart sports facilities, online competitions, and virtual sports for students (Deng et al., 2022), and the application of AI and metaverse via mobile internet (Li et al., 2022). In addition, the development of Internet of Things (IoT) for teaching physical education in smart method can also be observed during the Covid-19 pandemic which had been proven to be helpful in online learning (Vasile et al., 2022), and oriented to actual classroom teaching (Cai et al., 2019; Nosova et al., 2015; Turton et al., 2016), such as Google Classroom, Moodle, and other information technologies (Shmeleva et al., 2021). These studies proved that the Internet of Things (IoT) has been developed for teaching methods in physical education (Cheng, 2021; Wang et al., 2021a).

Internet of Things (IoT) devices also incorporate 5G communication network technology which has been emerged in the last 2 years related to physical activity (Chen & Liang, 2020a; Du et al., 2022) and the proposed 5G self-defense learning system (Chen & Liang, 2020b). Several empirical studies during this period also proved that the implementation of 5G internet-based physical education teaching system was able to improve students' understanding about tennis knowledge and tennis skill test performance (Chen et al., 2022), stimulate students' enthusiasm for learning, improve student learning efficiency and foster effective study habits (Huang & Wang, 2021). In addition, a physical education management also proposed 5G-oriented VR CPS (Child Protective Services) (Wei, 2020). Therefore, based on several studies that has been described, it shows that every aspect of life in modern times is inseparable from the influence and impact of technological growth and development, especially in physical education system.

This study applied a scientometric review to investigate critical ideas and publication trends in Internet of Things (IoT) research in physical education. Scientometrics is the study of

science with a distinct identity and methodology (Garfield, 2009). This term has become more popular and received recognition in recent decades, it is used to describe the study of science including the growth, structure, interrelationships and productivity of certain research (Ramy et al., 2018), and concentrates specifically on the social sciences and humanities (Mingers & Leydesdorff, 2015). There were several papers that had conducted scientometric analysis in the Internet of Things (IoT) field, such as IoT innovations in the agricultural sector (Harsanto, 2020), business model innovations networks in the Internet of Things (Jin & Ji, 2018), and there were other papers that discuss a specific topic about Internet of Things (IoT) (Dachyar et al., 2019; Ruiz-rosero et al., 2017), however, in education system, especially physical education, research about scientometric analysis was limited. Therefore, this study aims to uncover Internet of Things (IoT) trends in physical education through a scientometric review.

Method

This study used SCOPUS and Web of Science (WoS) databases to collect and analyze data in this study. Most of the scientometrics analysis used these two databases (Mingers & Leydesdorff, 2015). This bibliographic database contains information on high-quality, multidisciplinary research that published in scientific journals with significant global impact and allows consolidation of datasets to contribute in this research (Santamaria-Granados et al., 2021), and as the most frequently visited database by previous worldwide researchers (Abdullah, 2021; Sweileh, 2020; Yang et al., 2021). This section described the collection of bibliographic datasets and pre-processing.

Dataset Collection

First, researchers searched papers from the WoS and Scopus databases, by using keywords (“Internet of Things” OR “IoT” OR “Internet 4.0” OR “Internet of Everything” OR “Web of Thing”) AND (“physical education” OR “physical and health education” OR “sport education” OR “sport pedagogy” OR “physical education teacher education”). Information was taken from the bibliographic platform on May 21, 2022, and it was collected 103 papers, consisting of 64 papers (SCOPUS) and 39 papers (Web of Science).

Pre-processing Data

Pre-processing of bibliographic datasets generated with the ScientoPy tool (Ruiz-Rosero, Ramirez-Gonzalez, & Khanna, 2019), and using VOSviewer (Van Eck & Waltman, 2019), to generate co-occurrence maps of keywords related to Internet of Things (IoT) and physical education. Table 1 shows a pre-processing summary of duplicate documents that were removed from the combination of Scopus and WoS data set. The first column describes the input data set. The second column determines the number of documents issued and the number of papers generated from the duplicate filter. Finally, the third column shows the relative percentage before and after the filter.

Table 1. Preprocess brief with ScientoPy for the dataset obtained from WoS and Scopus

Information	Number	Percentage
Total Loaded papers	103	
Omitted papers by document type	9	0,87%
Total papers after omitted papers removed	94	
Loaded papers from WoS	35	3,72%
Loaded papers from Scopus	59	6,28%
Duplicated removal results:		
Duplicated papers found	25	2,66%
Removed duplicated papers from WoS	0	0
Removed duplicated papers from Scopus	25	4,24%
Duplicated documents with different cited by	13	5,2%
Total papers after removed duplicated	69	
Papers from WoS	35	5,07%
Papers from Scopus	34	4,93%

The brief pre-processing graph in Figure 1 shows the entire document for each database and the removed duplicate records. Based on Figure 1, the ScientoPy pre-processing script assigned the Web of Science document on top of the Scopus document; the number of documents from the Web of Science database were more than Scopus database after removed the duplication. The raw source dataset used in this study included 103 papers and entries added from the Web of Science and Scopus databases. This study had omitted 25 papers that

obtained from the automatic classification of ScientoPy publications. After data reconciliation, this study worked with 69 individual entries from both databases, containing 35 papers from the Web of Science and 34 articles from Scopus. There was no duplicate papers removed from the Web of Science database, while 25 duplicate papers were removed from the Scopus database

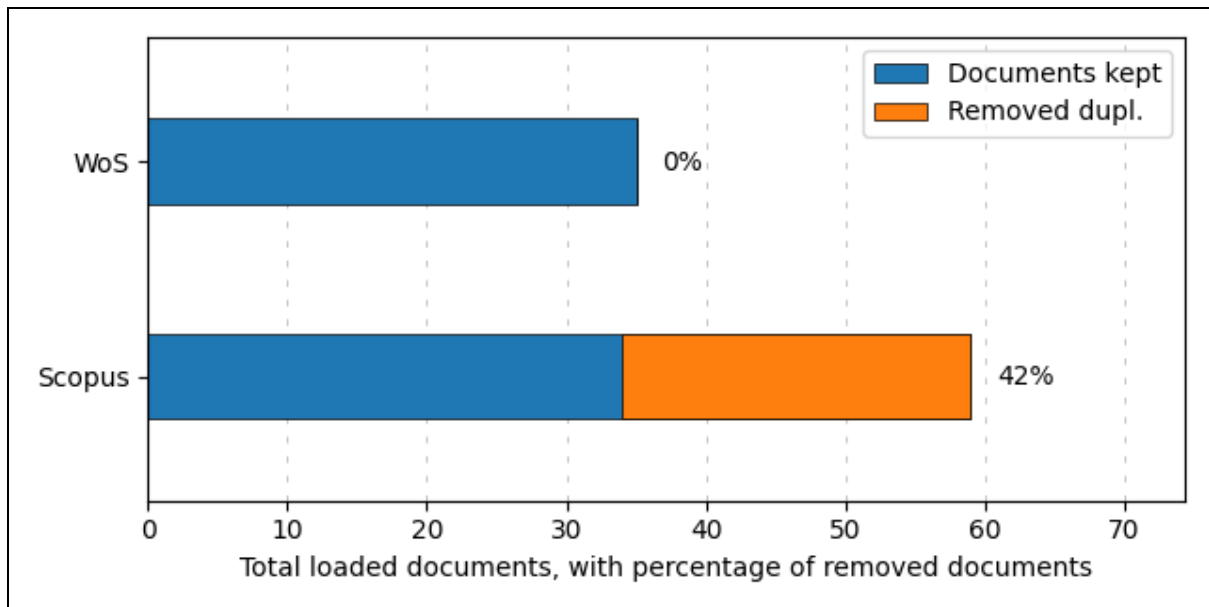


Figure 1. Data pre-processing from WoS and Scopus databases

Results

Trends of Publications

A total of 103 papers related to the Internet of Things (IoT) and physical education were collected from 2010. The distribution of papers showed a progressive increase over time. The increasing numbers showed that the internet of things and physical education are always become an important research area in related disciplines. From these two databases used (SCOPUS and Web of Science), 64 papers were contributed by SCOPUS and 39 papers were contributed from Web of Science. The web science was the first database that discussed this topic in 2010, while SCOPUS began publishing this topic in 2016. It can be seen that the topic of Internet of Things (IoT) and physical education in the range of 2018-2022 is increasing in number of publications.

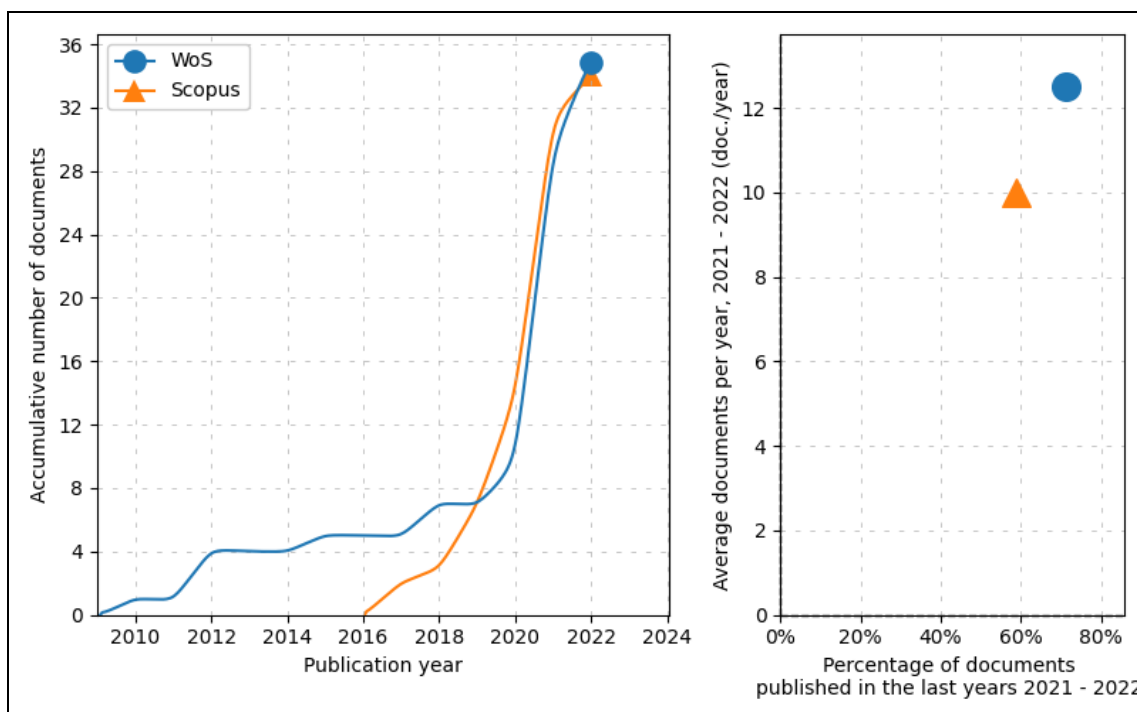


Figure 2. The growth of publications on digital marketing in the WoS and Scopus databases

The Most Influential Authors, Papers, Keyword, Institutional and Country in the Field of Internet of Things and Physical Education

Author Analysis

Researchers used the number of publications and the number of article citations as a way to identify the most active and influential researchers in the field of internet of things and physical education. Citations were used as a measure of influence (Zupic & Cater, 2015). Citation from citing publication to cited publication was considered a 'vote' for impact on the paper (Jha et al., 2017). Table 3 the list of top ten authors who have made significant contributions and influences based on the number of citations about internet of things and physical education. The table includes total publications, average growth rate (AGR), average documents per year (ADY), percentage of documents in recent years (PDLY), h-index of authors, and number of citations. The fact that papers from authors were cited in researches could help in the dissemination and scientific recognition. Table 2 is presented to help future readers and researchers in recognizing the names of well-known authors and collaborating in the internet of things and physical education fields. Based on table 2, the authors from rank one to ten have 2 papers, respectively. However, it was ranked again based on the number of

paper citations. Ji-Yun Cai and Ping-Ping Zhang got the first and second rank, both of them were collaborated to publish 2 papers in 2017 and 2019 with 21 citations.

Table 2. The Top Ten Proactive Authors on Internet of Things Research and Physical Education

Rank	Author	Total	AGR	ADY	PDLY	h-index	Cited by
1	Cai J.Y.	2	0.0	0.0	0.0	2	21
2	Zhang P.P.	2	0.0	0.0	0.0	2	21
3	Ding, Y.	2	-0.5	0.5	50.0	1	17
4	Wang, S.	2	0.5	0.5	50.0	1	14
	Sivaparthipan,						6
5	C.B.	2	0.0	1.0	100.0	1	
6	Kumar, P.M.	2	0.0	1.0	100.0	1	1
7	Wang F.	2	0.0	1.0	100.0	1	1
8	Wang J.	2	0.0	0.5	50.0	1	1
9	Liu Y.	2	0.0	1.0	100.0	0	0
10	Wang H.	2	0.0	0.5	50.0	0	0

Paper Analysis

In this study, until May 21, 2022, the author's metadata results produced by ScientoPy showed the top paper written by Dai, Yang, and You, (2019) with the title of “A New Approach of Intelligent Physical Health Evaluation based on GRNN and BPNN by Using a Wearable Smart Bracelet System” published in 2019 had 19 citations. The list of top 10 most influential papers can be seen in Table 3.

Table 3. The List of Papers that Frequently Cited in the Field of Internet of Things and Physical Education

Title	Author	Source	Citation	Year
A New Approach of Intelligent Physical Health Evaluation based on GRNN and BPNN by Using a	Dai Y., Guo J., Yang L., You W.	Procedia Computer Science	19	2019

Title	Author	Source	Citation	Year
Wearable Smart Bracelet System (Dai et al., 2019)				
5G-oriented IoT coverage enhancement and physical education resource management (Lei et al., 2021)	Lei, T., Cai, Z., Hua, L.	Microprocessors and Microsystems	17	2021
Application of Internet of Things and Virtual Reality Technology in College Physical Education (Ding et al., 2020)	Ding, Y., Li, Y.H., Cheng, L.	IEEE Access	17	2020
The optimization of intelligent long- distance multimedia sports teaching system for IOT (Gong et al., 2018)	Gong, W.M., Tong, L.T., Huang, W.W., Wang, S.	Cognitive Systems Research	14	2018
The support environment construction for teaching and research of physical education based on emerging information technology (Cai & Zhang, 2017)	Cai J.Y., Zhang P.P.	Journal of Computational and Theoretical Nanoscience	13	2017
5G-oriented IOT coverage enhancement and physical education resource management (Wei, 2020)	Wei C.	Microprocessors and Microsystems	10	2020
A novel physical education environment platform using Internet of Things and multimedia technology (Cai et al., 2019)	Cai J.Y., Zhang P.P., Tan X.	International Journal of Electrical Engineering Education	7	2019
Design of sports course management system based on Internet of Things and FPGA system (Pan, 2021)	Pan, C.H.	Microprocessors and Microsystems	7	2021
Evaluation of physical education teaching based on web embedded	Cheng, J.	Microprocessors and	7	2021

Title	Author	Source	Citation	Year
system and virtual reality (Cheng, 2021)		Microsystems		
Internet of things driven physical activity recognition system for physical education (Wang et al., 2021a)	Wang, Y., Muthu, B., Sivaparthipan, C.B.	Microprocessors and Microsystems	6	2021

Author Keywords Analysis

Author keywords were denoted by keywords chosen by authors to describe the content of their document in well-ordered. Most of the authors in the data set included their research topic in the keyword document. Author keywords have helped future readers and researchers to identify critical ideas and arguments in articles. Countless electronic search engines, databases, and journal sites rely on author keywords to find relevant articles and present them to potential readers. Readers should be aware that keywords generate links to other relevant publications. In this context, ScientoPy can assess the evolution of research topics or search arguments based on the keywords used by the authors.

Table 4 describes the 10 keywords used in previous studies. The most frequently used keywords were “Internet of Things (IoT)”, “Physical Education”, “Cloud Computing”, “College Physical Education” and “Artificial Intelligence”. Data processing was provided with broad items directly related to the subject. After that, the significant keywords can be accessed to help future readers and researchers to determine which term that suitable to use when analyzing the document. Although table 4 describes the first 10 keywords, ScientoPy allows us to observe an unlimited number of keywords (Ruiz-Rosero, Ramirez-Gonzalez, & Viveros-Delgado, 2019). Furthermore, in the analysis using VOSviewer, the overlay visualization in Figure 3 illustrates the evolution of the internet of things (IoT) in physical education from time to time. In this map, keywords with a blue (or magenta) color represent research activities related to the internet of things (IoT) in the physical education field were mainly had an older year of publication. Conversely, keywords in yellow indicate keywords that mainly used in the more recent year of publication. It can be seen that before 2020, the keywords were concentrated on certain words such as “internet of things”, “healthcare

system”, “work efficiency”, “tai chi”, “virtual reality”, “physical education”, “physical education teaching”, “sport”, “human”, “curriculum”, “big data”, “virtual reality”, “artificial intelligence”, “supporting system”, and “college physical education”. These keywords has a strong relationship with the internet of things (IoT). After 2020, the latest keywords that frequently used were “cloud platform”, “cloud computing”, “aerobics”, “athletes”, “social behavior”, and “augmented reality”.

Table 4. The Top 10 Authors Keywords on Internet of Things and Physical Education

Rank	Author Keywords	Total	AGR	ADY	PDLY	h-index
1	Internet of Things (IoT)	30	-0.5	5.0	62.5	8
2	Physical Education	23	-0.5	7.5	65.2	5
3	Cloud Computing	5	0.0	1.5	100.0	2
	College Physical					
4	Education	4	-1.0	1.0	50.0	1
5	Artificial Intelligence	3	-0.5	1.0	66.7	2
6	College Sports	3	0.0	1.0	66.7	1
7	Education	3	0.0	1.0	66.7	2
8	Sports	3	0.5	1.0	66.7	1
9	Virtual Reality	3	-1.0	0.5	33.3	2
	Physical Education					
10	System	3	0.0	1.5	100.0	1

Institutional with Country Analysis

Usually, each author who listed in a publication was affiliated with a particular institution for publishing purposes. ScientoPy used this data to process information about institutions and countries. Figuring out which institutions that most represented on a subject allowed researchers to choose a research location or participate in an academic program or research project that they want to collaborate with. This study could increase the prestige of the institution and encourages others to conduct research in order to gain a higher position. The bar graph in Figure 4 depicts the top ten institutions with their countries that published paper about the internet of things in physical education.

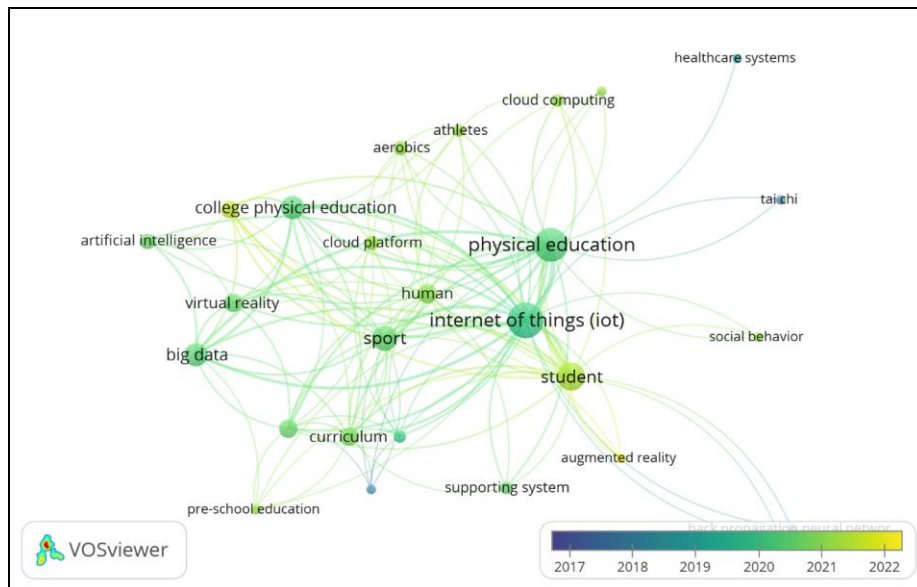


Figure 3. Overlay Visualization of Co-Appearance Authors Keyword

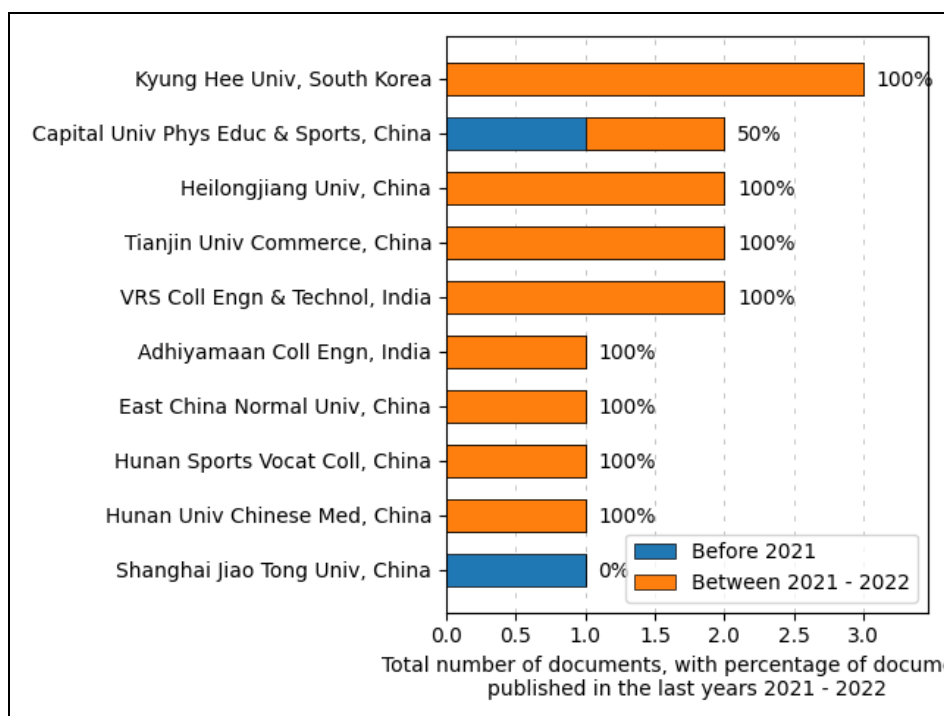


Figure 4. Top ten institutions with their countries that related to internet of things and physical education

Based on Figure 4, the institution that got the first rank with the highest number of papers is Kyung Hee University (South Korea) with 3 papers, while in the second, third, fourth and fifth rank have 2 papers, respectively and they were published by five universities, namely: Capital University of Physical Education and Sports (China), Heilongjiang University (China), Tianjin University Commerce (China), and VRS College of Engineering &

Technology (India). Out of these top ten institutions, China dominated in the internet of things and physical education. China contributed with 7 institutions, and the rest were from India and South Korea.

Discussion

In this study, the researcher reviewed papers that adopted the internet of things in physical education, and analyzed them. The study showed the current situation and trends in the development of the internet of things in physical education in detail. Looking at the study as a whole, since 2010, there has been a growing trend of this topic. This showed that with the advancement of modern technology, researchers have attempted to apply the internet of things in physical education in recent years, and the value of physical education in the context of the internet of things has been reported by several studies. Internet of things (IoT) plays an important role in physical education, and many researchers have applied internet of things technology in the design of physical education platforms (André et al., 2019; Hu et al., 2021; Lei et al., 2021; Lu, 2021; Wang, 2022; Wei, 2020). This internet of things technology creates many opportunities for improving learning and education in schools and universities (Wang et al., 2021b), such as improving social behavior and improving student coordination (Zhuang et al., 2021). Learning and education contexts were fully adopted these technologies, such as the application of e-learning platforms, computer games, and mobile applications involving video and image analysis as well as other skills that being taught (Cojocaru et al., 2022).

The term “ internet of things” first appeared in published papers since 2006, which describes the concept of an evolutionary paradigm that brought by the presence of internet technology (Vermesan & Friess, 2015), and has experienced interdisciplinary growth and development from year to year (Dachyar et al., 2019). The development of internet of things research in physical education was first published and discussed the application of the internet of things (IoT) in physical education (Song & Chen, 2010). This research is developing, starting from the COVID-19 pandemic era, which can be proved by the increase number of publications from 4 papers (2019) to 10 papers (2020), and increased again to 35 papers (2021). This is due to the importance of educational technology in the teaching and learning of physical education during the covid-19 pandemic (Cojocaru et al., 2022). During 13 years, writers from China have dominated in publishing papers on the topic of the internet of things and

physical education. However, the number of published papers was limited, and there were only 2 papers published from 2010-2022. They discussed the same topic, namely the development of student-centered teaching methods through the Internet of Things and multimedia technology (Dachyar et al., 2019; Deng et al., 2022). The two studies generally proposed a paradigm shift in teaching by teachers to physical education students in higher education. The emergence of these two studies was due to potential problems that encountered by students such as lack of knowledge of sports experiments and skills caused by the use of outdated teaching methods such as blackboard and chalk as a learning medium. The next problem was limited internet access which cause a big problem for the disruption in obtaining an update information. This study were conducted in the 2010-2022 period and resulted in an innovative solution to support the internet of things-based teaching and learning environment for physical education.

Conclusion

The main objective of scientometric review was to identify trends in publication and gaps in the Internet of Things (IoT) in physical education research. This study confirmed that there has been a significant increase in IoT trends in physical education. Thus, IoT is a main field of research that must be analyzed and evaluated, similar same with other studies. This research included discussion about authors, papers, keywords of authors, institutions and countries which were categorized as the most prominent topic. Today, research on this topic is highly developed in today's times with new methods and directions being set. Therefore, in-depth examination of the Internet of Things (IoT) in physical education research can assist researchers and practitioners in advancing prospective knowledge in this subject by identifying some gaps.

Finally, a number of important limitations need to be considered. First, the absence of reviewing the impact of IoT in physical education from year to year. Second, this review only used two databases (Scopus and WoS) in document search. The result of scientometric investigations provide insights for future based on the growth trends of publications and authors' keywords, as well as conduct research on the impact of using IoT in physical education classrooms. These aspects are important for future researchers to broaden the background or solve common problems with the Internet of Things (IoT) in physical education research. In addition, they can add other databases in searching for documents and

can also use other review methodologies, such as narrative, scoping, systematic literature review, or meta-analysis, to establish the relationships in the study.

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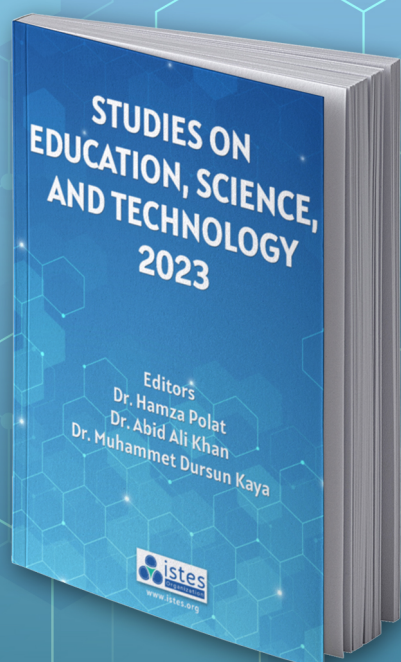
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