

## TECHNOLOGY USE IN IPS IN SMP LEARNING

**Mustopa** \*<sup>1</sup>

IAI Nusantara Batanghari Jambi, Indonesia  
[mustopasaja2020@gmail.com](mailto:mustopasaja2020@gmail.com)

**Risniwati**

SMP 16 Tanjungpinang, Indonesia  
[risniwati.2@gmail.com](mailto:risniwati.2@gmail.com)

**Moh. Imron Rosidi**

Universitas Negeri Gorontalo, Indonesia  
[mohimronrosidi@ung.ac.id](mailto:mohimronrosidi@ung.ac.id)

**Abdul Wahab Syakhrani**

STAI Rasyidiyah Khalidiyah Amuntai, Kal-Sel, Indonesia  
[aws.kandangan@gmail.com](mailto:aws.kandangan@gmail.com)

**Iyad Abdallah Al- Shreifeen**

Taibah University, Saudi Arabia  
[iyads80@yahoo.com](mailto:iyads80@yahoo.com)

### Abstract

The literature review carried out was aimed at empirically measuring the use of technology in social studies learning. This involves monitoring, measuring, and analyzing the effectiveness of technology in improving student understanding, information retention, and learning outcomes. Evaluate educational policies that support or hinder the integration of technology in the teaching and learning process. In this modern era, technology has become an integral component in education, with significant implications on how learning and teaching is conducted. With the existence of educational technology and learning technology in this social studies education study, students will be more enthusiastic, active and continue to try in terms of learning. Because as the era develops, education must also follow it as long as it is positive and has a good impact on educators and their students. Therefore it is very helpful in a learning environment. Usually in learning using a projector, laptop, salon, microphone etc. It is very helpful for educators and students to grasp or be sensitive to current learning concepts.

**Keywords:** Use, Technology, Social Studies Learning.

### INTRODUCTION

In this day and age, technology has experienced very rapid development, even now technology is widely used in the world of education to be used as a learning

---

<sup>1</sup> Correspondence author.

medium (Sitopu et al., 2024; Afni et al., 2024; Antika et al., 2024). The definition of learning media itself is a tool or means as an intermediary for conveying learning materials from educators to students with the aim of supporting success in the learning process.

In its development, technology can encourage new learning processes in the world of education (Tubagus et al., 2023; Aslan & Shiong, 2023; Muharrom et al., 2023). One of them is a change in the use of blackboards or whiteboards which are replaced by the use of technology such as using PowerPoint, recordings, or using learning videos (Nurhayati et al., 2023; Nurdiana et al., 2023; Erwan et al., 2023). Because using this technology is considered effective and efficient for educators to provide material for students in the teaching and learning process. Especially in this millennial era, educators must have knowledge and skills in creating and implementing learning media that will be used in learning (Ahmadi, D. M. R, 2018).

The development of science and technology has had a very rapid impact on the world of education (Sarmila et al., 2023; Sulastri et al., 2023; Haddar et al., 2023). In the teaching and learning process, there are two very important and interrelated elements, namely learning methods and learning media (Pram, 2013). The use of learning media in the teaching and learning process can also arouse new desires and interests in students, generate learning motivation, and even have a psychological influence on students (Aslan & Pong, 2023; Tuhuteru et al., 2023; Astuti et al., 2023). Apart from increasing students' learning motivation, the use or utilization of media can also increase students' understanding of lessons.

The media used has a position as a tool to help teachers in teaching. For example, graphics, films, slides, photos, and learning using computers. Its purpose is to capture, process and reconstruct visual and verbal information. As an aid in teaching, media is expected to provide concrete experiences, motivation to learn, increase students' learning absorption and retention.

There are still many schools that only prioritize cognitive aspects and do not pay attention to the issue of student learning motivation. This also happens at the junior high school (SMP) level, especially in social studies subjects. Sofa (Hicks, D, 2004) said that social studies is an integration of various branches of social science, namely sociology, cultural anthropology, psychology, history, geography, economics, political science and human ecology, which are formulated for instructional purposes with simplified material and objectives so that easy to learn and easy to digest.

According to Aan Budi (Gerring, J, 2011) IPS is an integrated study of social sciences and humanities in developing citizenship potential. Social Sciences is coordinated as a discussion built from several scientific disciplines such as: Anthropology, Archaeology, Economics, Geography, History, Law, Philosophy, Political Science, Psychology, Religion and Sociology, apart from that it also systematically covers humanities, Mathematics and Natural Sciences material. . Social studies

learning that is well designed and creative by utilizing multimedia technology, within certain limits will be able to increase students' understanding in achieving competency.

Social studies subject matter with a historical theme requires methods that bring students' emotions to sympathy, empathy and happiness. Generating student participation is very difficult if you apply the one-way lecture method. For this reason, it is necessary to use discussion and role playing methods that make students happy and understand the meaning of struggles from various regions with the help of cameras and audio-visual media. This is very easy for students to understand, and attracts students' desire to learn even more. Using technology in teaching and learning activities can stimulate students' interest in wanting to learn in contemporary ways (Doolittle, P. E., & Hicks, D, 2003).

The increasingly rapid development of information technology in the current era of globalization cannot avoid its influence on the world of education. Global demands require the world of education to always and always adapt technological developments to efforts to improve the quality of education, especially adapting its use to the world of education, especially in the learning process. Information technology is the development of information systems by combining computer technology with telecommunications (Baharudin, 2010).

The use and utilization of technology as a social studies learning medium is very important, because social studies learning consists of many areas of study such as history, geography, sociology, economics and so on (Abdelraheem, A. Y., & Al-Rabane, A. H, 2005). With this wide range of coverage, technology is really needed in the social studies learning process to make the learning process easier, such as overcoming difficulties in overcoming limitations of space, time and distance.

Apart from that, by using and utilizing technology as an ideal social studies learning medium, students can develop creative and initiative learning abilities. But in addition to providing many benefits from using technology, there are still obstacles and shortcomings in the teaching and learning process, these obstacles and shortcomings can result in obstacles to the teaching and learning process, these obstacles and shortcomings include a lack of infrastructure in educational intuition, an educator does not yet understand and master technology. in the sense that an educator does not have the skills to use technology, the educator's attitude is reluctant to make changes, and there is a lack of confidence in an educator in using technology.

## **RESEARCH METHOD**

The study in this research is qualitative with literature. The literature study research method is a research approach that involves the analysis and synthesis of information from various literature sources that are relevant to a particular research

topic. Documents taken from literature research are journals, books and references related to the discussion you want to research (Earley, M.A. 2014; Caruth, G.D. 2013).

## **RESULT AND DISCUSSION**

### **Understanding Technology in Social Sciences Education**

#### **A. Foundations of Social Sciences Education**

As a scientific discipline, IPS is the foundation for the future. It is hoped that it will be able to provide basic thinking results regarding order, as well as a deep understanding of Social Sciences as a scientific discipline. The following are the foundations of social studies education (Stanley, W. B., & Nelson, J. L, 2012):

##### **1. Philosophical Basis**

Related to providing ideas that will be used to take objects which will later become the core discussion in the development of Social Sciences, including how to develop and determine good, correct and reliable knowledge.

##### **2. Ideological Foundations**

According to O'Neil in Sapriya (2014), ideology is the basis for providing ideas containing ideology in PIPS and is not only addressed by general philosophy.

##### **3. Sociological Foundations**

On a sociological basis, there has been a sociological basis for educational institutions and institutions in a process of constructive social change (Bogusz, T, 2022; Wray, K. B, 2015).

##### **4. Anthropological Foundations**

This foundation is related to existing or fundamental systems in determining interests, needs and opinions as well as future directions through interaction processes.

##### **5. Foundations of Humanity**

The humanitarian foundation is related to the character of each individual, because in reality, the individual is the goal of the learning process.

##### **6. Political Foundation**

On this basis, involvement from the government is very high, because the education process cannot possibly be separated from the involvement of the government (Foster, K. A, 1993; Kennedy, J. L., & Grinter, T, 2015).

##### **7. Psychological Foundations**

This is the result of fundamental thinking in applying PIPS steps to form the order of scientific disciplines.

##### **8. Religious Foundation**

In connection with the ethics, values and morals that are inherent in and form the basis of PIPS itself, especially those originating from the scope of education in Indonesia itself.

## B. Theoretical Study of Educational Technology

According to Nasution (1987) educational technology is a tool for education that was born on the basis of the development of information technology. Meanwhile, according to Miarso (Nurdyansyah, N, et al, 2017) educational technology is a comprehensive event and based on experience that involves several elements including people, procedures, ideas, equipment to analyze problems, find solutions, carry out, test and manage problem solving. concerns all aspects of human learning.

This educational technology is considered developed and significant. However, this development is still felt to be lacking in this era of globalization. Therefore, educational technology must continue to develop so that it can cover all aspects of education and can be applied in the learning system. Every solution provided is in harmony with human nature. In the context of education, Islam has determined that the state is obliged to regulate all aspects relating to the education system so that education can be obtained easily by the public.

Apart from the study and implementation of the concept of Educational Technology which continues to develop, in Indonesia the recognition and growth process of the Educational Technology trend in society is still influenced by the legal provisions that cover it, so that even though there has been a lot of scientific implementation of Educational Technology in the world of education, there is not much recognition of this trend. who knows as part of Educational Technology science (Ariani, D, 2017).

The aim of educational technology is to stimulate (stimulate) and trigger (grow) learning. Learning, which can be seen by changes in knowledge, skills or attitudes, is a criterion or measure of learning. Educational Technology in Indonesia is very dynamic and diverse, this is because each Educational Technology Study Program has its own characteristics, the scientific dynamism of lectures like this further adds to the diversity of the Educational Technology profession.

## C. Theoretical Study of Learning Technology

Learning technology is the concept of educational technology as expressed in the 1977 definition, which has become a serious study among educational experts, so that two groups have emerged who have their own opinions. Learning technology can combine various approaches ranging from psychology, management, engineering, communication and so on. Can solve learning problems that often occur in students and even all humans. The existence of learning technology can help or make it easier to solve learning problems (Kanuka, H, 2008).

Learning technology is the use and specific knowledge of tools so that they become skills in education and learning. Generally, people look at it from the teacher's perspective. Most educators think that learning technology is a solution

for all classroom learning. Almost all curriculum implementation uses technology (Varlamis, I., & Apostolakis, I, 2006).

Using appropriate learning media in the learning and teaching process in the classroom can bring success to both teachers and students. Learning media functions to accommodate students who are weak and slow to accept and understand lesson content presented with text or presented verbally. In social studies lessons, teachers are required to be able to direct students to think critically and creatively.

The learning process should take place in an interactive, inspiring, fun, challenging manner, motivate students to participate actively, and provide sufficient space for initiative, creativity and independence according to the students' talents and interests. The learning process must involve many parties, which is balanced by technological developments to make it easier to achieve a certain atmosphere in the learning process so that students are comfortable in learning (Liu, Q., et al, 2020). The essence of learning is a process of direction to achieve goals by carrying out actions through the experiences created.

To improve the quality of learning, it can be done using an educational technology approach or the function of learning is to find out the problems being faced in learning. Learning can be done anywhere, anytime and from anyone, about anything, with any method and source that suits your conditions and needs. The term learning technology covers many utilization environments that describe the function of technology in education more precisely; can refer to both study and learning; and solving learning problems/learning facilities, learning technology is a field of innovation in the field of education (Iqbal, A. F. F, 2018).

Educational technology is differentiated into several definitions, including 5 types as follows (Mason, R, 2006): learning technology used for media, learning technology used for a field of science, learning technology used for a process, learning technology used for the science area. However, the reality is that many people cannot differentiate between educational technology and learning technology, in fact both learning technologies are used in the 1970 definition and the 1994 definition, whereas in 1972 and 1977.

### **The Relevance of Technology in Social Studies Learning**

Technology has an important role in various learning methods. The use of technology in social studies education helps improve students' understanding, makes learning more interesting, and facilitates access to resources and information. Technology allows the creation of simulations, educational games, computer-based activities that allow students to interactively explore social studies concepts (Berson, M., et al, 2000). In the learning process, using multimedia such as video, audio and images in social studies learning can help students understand complex concepts. For

example, using documentary videos to understand history, animation to understand geography.

The personalized learning method is one method that uses the role of technology. The main benefit of personalized learning is the ease of providing interaction by presenting information, media and flow that suits students' learning preferences. By using technology, teachers can access a variety of diverse learning resources, such as online learning platforms, educational applications, and interactive software. One way to apply personalized learning methods is to use adaptive learning. The definition of adaptive learning itself is a way of adapting or adjusting several conditions, starting from oneself and the student's environment, so that the mastery of skills, knowledge and attitudes occurs (Crisolo, O. R., et al, 2021).

The adaptive learning process utilizes technology to automatically analyze students' level of understanding and adapt learning materials according to their needs. For example, by using intelligent algorithms, adaptive learning systems can provide additional practice to students who require deeper understanding, while advanced students can be given a higher challenge. Apart from that, technology also allows teachers to provide more specific and timely feedback to students (Kudawe, C., et al, 2020). By using technology, teachers can introduce students to interactive simulations that allow them to understand social studies concepts in a more visual and practical way. For example, students can use simulation applications or software to explore the course of history, observe economic processes, or understand social relationships in society.

## **CONCLUSION**

Social studies education has a broad scope related to human life and society. IPS is concerned with how humans fulfill their needs, both material, cultural and psychological; utilize the resources available on the earth's surface; regulate welfare and government as well as other needs in order to maintain the life of human society. IPS has a broader meaning as stated by the National Council for Social Studies/NCSS that IPS is an integrated study of social sciences and humanities to promote civic competence. This competency can be seen in the character after studying social sciences, namely religious, nationalist, mutually beneficial cooperation and high integrity. In the school program, social studies provides an overview of systematic study links from a number of scientific disciplines such as anthropology, archaeology, economics, geography, history, law, philosophy, political science, psychology, religion, and sociology, as well as other humanities content. Thus, IPS is a social science that combines social sciences and humanities to improve civic competence. Social studies learning aims to train students to think critically and become individuals who have social skills.

Technology can be a powerful tool to support educational paradigm shifts towards inclusive, interactive and innovative education. The use of technology in social studies education helps improve students' understanding, makes learning more interesting, and facilitates access to resources and information. Technology allows the creation of simulations, educational games, computer-based activities that allow students for interactive exploration of social studies concepts. In the learning process, using multimedia such as video, audio and images in social studies learning can help students understand complex concepts. Although technology can be a powerful tool in social studies learning, some concepts or learning methods may not be effectively realized through technology. This requires creative thinking and adaptation to remain in line with learning objectives. To overcome these challenges and obstacles, there needs to be careful planning, adequate technology training for students and teachers, and attention to issues of security, privacy, and academic integrity. It is also important to ensure that the use of technology in social studies learning is carried out with clear objectives and in accordance with student needs and the curriculum.

## REFERENCES

- Aan Budi. (2014). Keefektifan Pembelajaran Menggunakan Media CD pembelajaran Pada Mata Pelajaran IPS Kelas V SD. *Jurnal Ilmiah Mitra Swara Ganesha*, ISSN; 2356 – 3443 Vol. 1 No. 1 Juli 2014
- Abdelraheem, A. Y., & Al-Rabane, A. H. (2005). Utilisation and benefits of instructional media in teaching social studies courses as perceived by Omani students. *Malaysian Online Journal of Instructional Technology*, 2(1), 8.
- Afni, T. N. A. N., Aslan, A., & Astaman, A. (2024). PROBLEMATIKA PEMBELAJARAN FIQIH DI KELAS IV MIS DARUL IHSAN SEPINGGAN PASCA KEBAKARAN TAHUN PELAJARAN 2022/2023. *Lunggu Journal*, 2(1), Article 1.
- Ahmadi, D. M. R. (2018). The use of technology in English language learning: A literature review. *International journal of research in English education*, 3(2), 115-125.
- Antika, M., Aslan, & Karlina, E. M. (2024). PENERAPAN METODE PEMBIASAAN DALAM MENINGKATKAN KEMANDIRIAN PADA ANAK KELOMPOK B1 DI TKIT YA BUNAYYA SAMBAS TAHUN PELAJARAN 2022-2023. *Samawa (Sakinah, Mawaddah Warahmah)*, 7(1), Article 1.
- Ariani, D. (2017). Aktualisasi Profesi Teknologi Pendidikan di Indonesia. *Indonesian Journal of Curriculum and Educational Technology Studies*, 5(1), 1-9.
- Aslan, A., & Pong, K. S. (2023). Understanding the Trend of Digital Da'wah Among Muslim Housewives in Indonesia. *Fikroh: Jurnal Pemikiran Dan Pendidikan Islam*, 16(1), Article 1. <https://doi.org/10.37812/fikroh.v16i1.681>
- Aslan, A., & Shiong, P. K. (2023). Learning in the Digital Age Full of Hedonistic Cultural Values Among Elementary School Students. *Bulletin of Pedagogical Research*, 3(2), 94. <https://doi.org/10.51278/bpr.v3i2.515>
- Astuti, S. E. P., Aslan, A., & Parni, P. (2023). OPTIMALISASI PERAN GURU DALAM PROSES PEMBELAJARAN KURIKULUM 2013 DI MADRASAH IBTIDAIYAH

- SWASTA. *SITTAH: Journal of Primary Education*, 4(1), Article 1. <https://doi.org/10.30762/sittah.v4i1.963>
- Baharudin, R. (2010). Keefektifan Media Belajar Berbasis Teknologi Informasi Dan Komunikasi. *Tadrîs*, 5(1), 112–127.
- Berson, M., Diem, R., Hicks, D., Mason, C., Lee, J., & Dralle, T. (2000). Guidelines for using technology to prepare social studies teachers. *Contemporary issues in technology and teacher education*, 1(1), 107-116.
- Bogusz, T. (2022). Categorical Foundations of a Social Theory of Experimentalism: John Dewey as a Sociologist. In *Experimentalism and Sociology: From Crisis to Experience* (pp. 15-82). Cham: Springer International Publishing.
- Caruth, G. D. (2013). Demystifying mixed methods research design: A review of the literature. *Online Submission*, 3 (2), 112-122
- Crisolo, O. R., Camposano, S., & Rogayan, D. V. (2021). Relevance of social studies in the 21st century society: Students' perspectives. *International Journal of Didactical Studies*, 2(1), 101457.
- Doolittle, P. E., & Hicks, D. (2003). Constructivism as a theoretical foundation for the use of technology in social studies. *Theory & Research in Social Education*, 31(1), 72-104.
- Earley, M.A (2014). A synthesis of the literature on research methods education. *Teaching in Higher Education*, 19 (3), 242-253
- Erwan, E., Aslan, A., & Asyura, M. (2023). INTERNALISASI BUDAYA RELIGIUS OLEH GURU AKIDAH AKHLAK UNTUK MENUMBUHKAN SIKAP AKHLAK MULIA DI MIS BINA DHARMA PARIT RABU. *JURNAL PENDIDIKAN DAN KEGURUAN*, 1(6), Article 6.
- Foster, K. A. (1993). Exploring the links between political structure and metropolitan growth. *Political Geography*, 12(6), 523-547.
- Gerring, J. (2011). *Social science methodology: A unified framework*. Cambridge University Press.
- Haddar, G. A., Haerudin, H., Riyanto, A., Syakhrani, A. W., & Aslan, A. (2023). THE REVOLUTION OF ISLAMIC EDUCATION THOUGHT IN THE ERA OF SOCIETY 5.0: CORRECTIONS AND ANALYSIS OF STUDIES IN ISLAMIC HIGHER EDUCATION INSTITUTIONS IN SOUTH KALIMANTAN. *International Journal of Teaching and Learning*, 1(4), Article 4.
- Hicks, D. (2004). The four literatures of social science. *Handbook of quantitative science and technology research: The use of publication and patent statistics in studies of S&T systems*, 473-496.
- Iqbal, A. F. F. (2018). *Kajian Teoritik Teknologi Pendidikan*. Universitas Muhammadiyah Sidoarjo.
- Kanuka, H. (2008). *Understanding e-learning technologies-in-practice. The theory and practice of online learning*, 91.
- Kennedy, J. L., & Grinter, T. (2015). A pedagogy of radical love: Biblical, theological, and philosophical foundations. *The International Journal of Critical Pedagogy*, 6(1).
- Kudawe, C., Otchere, S. N., & Afari, J. B. (2020). Relevance of social studies education in the technical school programme: A survey of Kumasi Technical Institute in Ghana. *Journal of Education & Social Policy*, 7(1), 71-80.

- Liu, Q., Geertshuis, S., & Grainger, R. (2020). Understanding academics' adoption of learning technologies: A systematic review. *Computers & Education*, 151, 103857.
- Mason, R. (2006). Learning technologies for adult continuing education. *Studies in Continuing Education*, 28(2), 121-133.
- Muharrom, M., Aslan, A., & Jaelani, J. (2023). IMPLEMENTASI KURIKULUM MERDEKA BELAJAR PADA PEMBELAJARAN PENDIDIKAN AGAMA ISLAM DI SMK PUSAT KEUNGGULAN SMK MUHAMMADIYAH SINTANG. *Jurnal Ilmu Pendidikan Dan Kearifan Lokal*, 3(1), Article 1.
- Nurdiana, R., Effendi, M. N., Ningsih, K. P., Abda, M. I., & Aslan, A. (2023). COLLABORATIVE PARTNERSHIPS FOR DIGITAL EDUCATION TO IMPROVE STUDENTS' LEARNING ACHIEVEMENT AT THE INSTITUTE OF ISLAMIC RELIGION OF SULTAN MUHAMMAD SYAFIUDDIN SAMBAS, INDONESIA. *International Journal of Teaching and Learning*, 1(1), Article 1.
- Nurdyansyah, N., Rais, P., & Aini, Q. (2017). The Role of Education Technology in Mathematic of Third Grade Students in MI Ma'arif Pademonegoro Sukodono. *Madrosatuna: Journal of Islamic Elementary School*, 1(1), 37-46.
- Nurhayati, N., Aslan, A., & Susilawati, S. (2023). PENGGUNAAN TEKNOLOGI GADGET SEBAGAI MEDIA PEMBELAJARAN PADA ANAK USIA DINI DI RAUDHATUL ATFHAL AL-IKHLAS KOTA SINGKAWANG. *JIP: Jurnal Ilmu Pendidikan*, 1(3), Article 3.
- Pram. (2013). Pengaruh media pembelajaran menggunakan macromedia Flash 8 pokok bahasan internet pada mata pelajaran TIK Terhadap Prestasi Belajar Siswa Kelas XI IPA SMA N 6 Purworejo. *Jurnal Pendidikan Teknik Informatika Edisi 1 Tahun ke 2013*
- Sarmila, U., Aslan, A., & Astaman, A. (2023). THE ROLE OF PARENTS TOWARDS YOUTUBE USERS IN BUILDING CHILDREN'S RELIGIOUS BEHAVIOR IN KUALA PANGKALAN KERAMAT VILLAGE. *Archipelago Journal of Southeast Asia Islamic Studies (AJSAIS)*, 1(2), Article 2.
- Sitopu, J. W., Khairani, M., Roza, M., Judijanto, L., & Aslan, A. (2024). THE IMPORTANCE OF INTEGRATING MATHEMATICAL LITERACY IN THE PRIMARY EDUCATION CURRICULUM: A LITERATURE REVIEW. *International Journal of Teaching and Learning*, 2(1), Article 1.
- Stanley, W. B., & Nelson, J. L. (2012). The foundations of social education in historical context. In *inside/out* (pp. 265-284). Routledge.
- Sulastri, S., Aslan, A., & Rathomi, A. (2023). STRATEGI GURU PENDIDIKAN AGAMA ISLAM DALAM PENYAMPAIAN MATERI PADA ANAK TUNAGRAHITA DI SEKOLAH LUAR BIASA NEGERI SAMBAS TAHUN PELAJARAN 2022/2023. *Lunggu Journal: Literasi Unggulan Ilmiah Multidisipliner*, 1(4), Article 4.
- Tubagus, M., Haerudin, H., Fathurohman, A., Adiyono, A., & Aslan, A. (2023). THE IMPACT OF TECHNOLOGY ON ISLAMIC PESANTREN EDUCATION AND THE LEARNING OUTCOMES OF SANTRI: NEW TRENDS AND POSSIBILITIES. *Indonesian Journal of Education (INJOE)*, 3(3), Article 3.
- Tuhuteru, L., Misnawati, D., Aslan, A., Taufiqoh, Z., & Imelda, I. (2023). The Effectiveness of Multimedia-Based Learning To Accelerate Learning After The

- Pandemic At The Basic Education Level. *Tafkir: Interdisciplinary Journal of Islamic Education*, 4(1), Article 1. <https://doi.org/10.31538/tijie.v4i1.311>
- Varlamis, I., & Apostolakis, I. (2006). The present and future of standards for e-learning technologies. *Interdisciplinary Journal of E-Learning and Learning Objects*, 2(1), 59-76.
- Wray, K. B. (2015). Kuhn's social epistemology and the sociology of science. *Kuhn's structure of scientific revolutions-50 years on*, 167-183.