

THE LIFE MAP FOR DEVELOPING MULTILITERACIES COMPETENCE: A PRELIMINARY STUDY

Sendi Ramdhani¹, Siti Maryam², and Elsa Komala³

Universitas Suryakancana

sendi@unsur.ac.id

ABSTRACT

Multiliteracies competence of Indonesian students is still low based on the results of the 2018 PISA study which places Indonesia at level 1 (lowest) from 6 levels (highest). The multiliteracies competence referred to are reading literacy, mathematical literacy, and scientific literacy. This can also be seen in several studies that have been carried out, for example the results of the 2019 study revealed that 74% of the provinces were in the low and very low category on the reading literacy activity index, the results of the 2017 study showed that the mathematics literacy skills of high school students were in the very low category, and research in 2018 shows that the science literacy skills of new high school students are developing. Low literacy will have an impact on the low productivity of the nation so that it will also have an impact on the level of national welfare. Therefore, it is necessary to increase literacy skills through the provision of reading materials and increase children's reading interest. This reading material can be in the form of digital reading material which is now very abundant and easily accessible via smart phones, which are mostly owned by high school students. The use of digital technology reading materials will also be more optimal if it is done through maps of students' lives because they will access information about knowledge, skills, and character values (personality) according to their goals.

Keywords: *Reading Literacy, Mathematical Literacy Science Literacy, Life Map, Digital Technology*

INTRODUCTION

Literacy is an important aspect in nation-building because functionally literacy is the basis of all forms of success both in school and in life, so it is a prerequisite for life skills in the 21st century (Rintaningrum, 2009; Atmazaki, 2017). The World Economic Forum in 2015 agreed on six basic literacies that must be mastered, namely reading and writing literacy, numeracy or mathematics literacy, scientific literacy, digital literacy, financial literacy, and cultural and civic literacy (Atmazaki, 2017).

Multiliteracies competence is part of the School Literacy Movement (GLS) which was initiated by the Ministry of Education and Culture based on nine national priority agendas (nawacita) (Kemendikbud, 2017). Increasing multiliteracies competence is part of strengthening student character. Students who have good multiliteracies competence are expected to become smart, healthy, courageous, and highly competitive Indonesian human resources in the industrial era 4.0 which is part of the 2020-2024 national research priorities (Peraturan Menteri Riset, Teknologi, Dan Pendidikan Tinggi Republik Indonesia Nomor 38 Tahun 2019)

This paper will focus on three literacy skills which we call multiliteracies because they are motivated by the results of the PISA (Program for International Students Assessment) study related to the achievement of Indonesian students' reading, mathematics and science literacy. The results of the PISA study in 2018 show that Indonesian students are still at level 1 (lowest) from 6 levels (highest) in all three literacy. The average reading literacy score of Indonesian students is 371 while the OECD country average is 487, the average math literacy score is 379 while the OECD country average is 489, and the average science score is 396 while the OECD country average is 489 (Schleicher, 2019) This illustrates that Indonesian students' literacy skills in

reading, mathematics, and science are still low because Indonesia is far below the world average. The following is an overview of the results of the PISA (Program for International Students Assessment) study of Indonesian children from time to time:

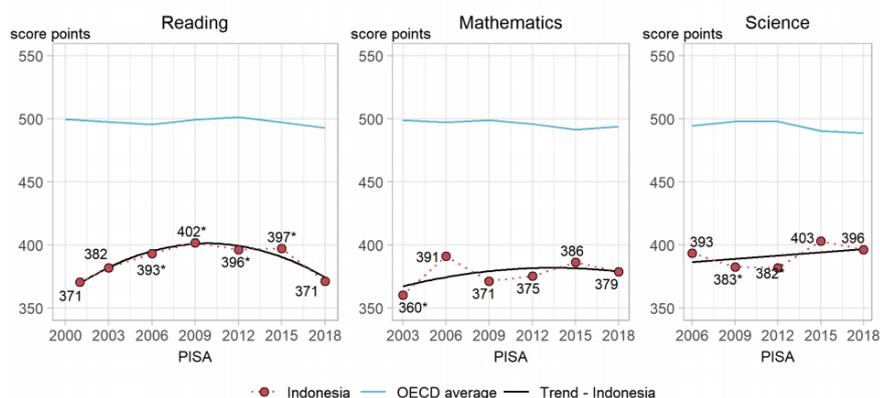


Figure 1. Literacy Outcomes of PISA Results

The research results of the Ministry of Education and Culture in 2019 also showed that the reading literacy activity index in 34 provinces was reported as none were in the high category, even 74% of the provinces were in the low and very low categories (Solihin, Utama, Pratiwi, and Novirina, (2019). Likewise with regard to mathematical and scientific literacy abilities, the results of research in Yogyakarta show that the mathematics literacy skills of high school students are in the very low category and the science literacy abilities of high school students in Malang are just developing (Sari & Wijaya, 2017; Mukti, dkk, 2019)

Low literacy will have an impact on the low productivity of the nation so that it will also affect the level of national welfare. Therefore it is necessary to make efforts to improve literacy skills. The entrance to developing the nation's literacy culture is through the provision of reading materials and increasing children's reading interest (Atmazaki, 2017). This reading material can be in the form of digital reading material which is now abundant and easily accessible via smartphone. This needs to be optimized because students and students who have smart phones based on the results of the 2018 survey by the Research and Development Center for Aptika IKP Kominfo are 71% and even 80% of high school students own smartphones (Kominfo, 2018).

The use of digital technology reading materials will also be optimal if it is done through student life maps. Students will access information, knowledge, skills, and character values (personality) according to their targets. Student life maps are thought to be a trigger and trigger for various forces: initiative, appreciative, expressive, creative, innovative, and critical students in multiliteracies activities because based on previous research, life maps have been used to improve the ability to write complex procedures Maryam & Adawiyah, 2019; and write essays (Maryam & Adawiyah, 2019; Maryam, dkk, 2020). In addition, it is used as therapy (Ilmiah, 2015)

State of The Art

Gardner's findings on multiple intelligences have shown great promise in education. It used to be that people's perceptions of logical-mathematical intelligence were viewed as superior to other intelligences (Jasmine, 1996). Currently, the other six intelligences, linguistic spatial intelligence, spatial intelligence, musical intelligence, kinesthetic intelligence, interpersonal intelligence, and intrapersonal intelligence can be developed in parallel.

The acceptance of multiple intelligences gives students the opportunity to map goals and life expectancies. This is in line with the opinion (Kariadinata, 2007). which states three functions of education, namely (1) development function, helping individuals to develop themselves according to their nature (potential), (2) diversity (differentiation), helping individuals choose the right direction of development according to their potential, and (3) Integration, bringing a variety of developments towards the same goal in accordance with human nature to become a whole person (kaffah).

A life map (life map or life mapping) is a picture of the target that a person makes in his life. The function is a map as a guide because it gives a living picture like a map. It's just that, if the blind map or google maps is filled with geographic names, the live map is filled with the author's target. As presented as follows.

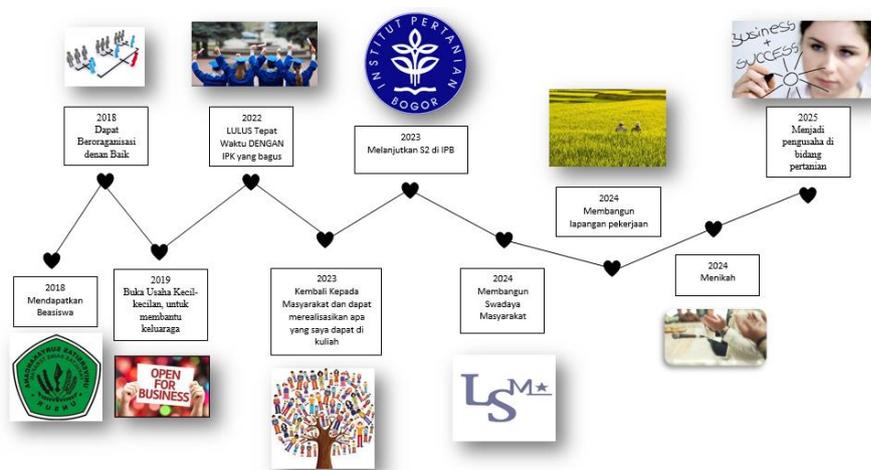


Figure 2. Example of a Life Map

In previous studies, maps have been used to improve complex writing skills (Maryam & Adawiyah, 2019) and essay writing (Maryam, dkk, 2020). In addition, it is used as therapy (Ilmiah, 2015). The next question is, can technology-based life maps be used as an effective method for multiliteracies competence to strengthen the character of high school students?

The source of reference for students in making live maps will be more effective if they use digital technology. Why digital technology? (Jacobs, 2010). the growing influence of technology on education is not only about incorporating technology in the curriculum, but more about how to influence social trends and the implications of these phenomena on social life, culture, and learning in the 21st century. Students today come from generations who were born and grew up with technology.

Multiliteracies for high school students is one of the goals of the School Literacy Movement (GLS), building a literacy SMA ecosystem, creating conditions that support the development of critical, creative, innovative, entrepreneurial, socially empathetic behavior and love of knowledge [16]. This development is relevant in the 21st century education curriculum (Jacobs, 2010). Multiliteracies in question is reading literacy, mathematical literacy, and scientific literacy. Reading literacy understands the ability to understand written text, communicate in writing, obtain and process information contained in text, and can achieve one's goals, namely to develop one's skills, knowledge and potential to be actively involved in society the ability to work with texts (Delgadova, 2015). Mathematical literacy according to PISA is the individual's ability to analyze, reason, communicate ideas, formulate, solve and interpret mathematical problems in various situations (Schleicher, et al, 2009).. Meanwhile, scientific literacy is the ability to use knowledge,

identify questions, and based on evidence, in order to understand and make decisions regarding nature and changes made to nature through human activities (Toharudin, Hendrawati, & Rustaman, 2011).

Multiliteracies comes from multimodal (Sari, Suryaman, & Lestyarini, 2013) The use of language varies with pictures, sounds, and other things that are needed and support social functions. If this student life map method is successful in increasing the multiliteracies competence of students, then the phrase 'change your words, change your world' will be realized. The creativity of students built in the form of language that changes the strength of a society.

METHOD

This paper only focuses on discussing the indicators of each literacy competency and some of the difficulties faced in each literacy competency based on the results of previous research. This will be the basis for developing life map-based learning that can develop each student's literacy competency.

FINDINGS AND DISCUSSION

Reading Literacy

Indicators of reading literacy skills are ability to understand, use, and reflect in written form (reflecting on written text) (Hayat, 2003). The factors that cause weak reading literacy are: 1) answer questions based on guesses; 2) less specific questions; 3) the quality of the content of the discourse is not considered enough; 4) reading competence has not been developed; 5) reading habits have not been developed adequately; 6) should prioritize reading competence: a) habits b) interests c) motivation, d) book culture; 7) the theory of language and literature is adjusted to the purpose of reading; and 8) provided public space is provided to build reading habits (Suryaman, 2015).

The recommendations for developing reading literacy abilities are: 1) results of the PIRLS program study to improve the performance of Indonesian language learning; 2) develop teaching materials, not just textbooks but enrichment books; 3) make reading literacy as an umbrella for learning; dan 4) discourse should be intact and of quality.

Mathematical Literacy

Mathematical literacy is an individuals capacity to identify and understand the role that mathematics plays in the world, to make well-founded judgements and to use and engage with mathematics in ways that meet the needs of that individual's life as a constructive, concerned and reflective citizen (OECD, 2003). As for examples of literacy questions, namely:

1. You are an employee at a company. At one point you were assigned by your boss to rent a car for an out of town assignment. Based on information on the Internet there are two car rentals close to the company you work for, namely "A" Car Rentals and "B" Car Rentals, but you have to decide which Car Rental to choose because they charge different prices: Car Rental "A" charges fee of Rp. 200,000 a day and Rp. 10,000 per kilometer; while car "B" charges Rp. 150,000 a day and Rp. 20,000 per kilometer. Which rental would you choose to rent a car for a day? Give reasons for your answer
2. You are a final year student. You will print the thesis in a Photocopy place. There are 2 Photocopy places near your campus, namely the Copy "A" place and the Copy B place. The cost of printing at the Copy "A" place costs IDR 150.00 per sheet for black and white and IDR 500.00 per sheet for color . Printing costs at the copy shop "B" is Rp. 200.00 per sheet for black and white and Rp.450.00 per sheet for color. Based on this information, which copy place will you choose? Give reasons for your answer.

Science Literacy

According to Hurt (Toharudin, et al. : 2011), Science literacy means the act of understanding science and applying it to the needs of society. Scientific literacy is also the ability to use scientific knowledge, identify questions, and draw conclusions based on evidence, in order to understand and make decisions regarding nature and changes made to nature through human activities (OECD, 2009);

Four domains of scientific literacy (OECD, 2013), which will be used as a reference and developed to become indicators of scientific literacy, namely:

1. Context domain, a domain that is not limited to the context of the concept of science, but can study information about contextual issues and apply it in everyday life to solve personal and public problems.
2. Science competence, which is meant in the 2015 PISA framework, consists of three main competencies, namely identifying scientific issues, explaining scientific phenomena, and interpreting scientific data and evidence.
3. Knowledge of science, a domain that is not limited to knowledge of science material content, but based on the aim of the PISA assessment is to describe the extent to which they can apply their knowledge in a context that is relevant to their lives.
4. Attitudes towards science, in the 2015 PISA framework this domain is related to interest in knowledge and technology, environmental awareness and assessing the scientific approach to asking a question, with the aim that the information obtained has benefits for present and future life, so that it will help in review and test the correctness of information through an assessment of the information by asking various questions, so that the information obtained is valid and avoid hoaxes.

REFERENCES

- Atmazaki, et al (2017). *Panduan Gerakan Literasi Nasional*. Jakarta: Kementerian Pendidikan dan Kebudayaan.
- Delgadova, E. (2015). Reading literacy as one of the most significant academic competencies for the university students. *Procedia-Social and Behavioral Sciences*, 178, 48-53.
- Hayat, B. (2003). *Kemampuan Dasar Hidup: Literasi Membaca, Matematika, dan Sains Anak Indonesia Usia 15 Tahun di Dunia Internasional*. Jakarta: Pusat Penilaian Pendidikan.
- Ilmiah N. (2015) Aplikasi Terapi Life Mapping dengan Pendekatan Cognitive Behavior dalam Menangani Siswi yang Membolos di SMA Al-Islam Krian Sidoarjo. *Skripsi X* 373–9.
- Jacobs, H. H. (2010). *Curriculum Essential Education 21 for a Changing World Vol 3*, ed H H Jacobs (ASCD cares about Planet Earth.).
- Jasmine, J. (1996). *Teaching with Multiple Intelligences. Professional's Guide*. Teacher Created Materials, Inc., 6421 Industry Way, Westminster, CA 92683.
- Kemendikbud, T. G. (2017). *Panduan Gerakan Literasi di Sekolah Menengah Atas*. Direktorat Pembinaan Sekolah Menengah Atas Direktorat Jenderal Pendidikan Dasar dan Menengah Kementerian Pendidikan dan Kebudayaan.
- Kominfo. (2018). Siaran Pers No.22/HM/KOMINFO/01/2018 Tanggal 31 Januari 2018 Tentang *Survei Penggunaan Tik Serta Implikasinya Terhadap Aspek Sosial Budaya Masyarakat*.
- Maryam S and Adawiyah A. (2019) Implementasi Peta Hidup bagi Peningkatan Kemampuan Menulis Teks Prosedur Kompleks. *Proceeding Connects 3*, pp 167–72.
- Maryam S, Adawiyah A, Hasanah A and Wahyudin D. (2020). The Role of Life Maps in Writing Student Essays. *Proceedings.UHAMKA.ac.id*, pp 129–33.
- Mukti, W. R., Yuliskurniawati, I. D., Noviyanti, N. I., Mahanal, S., & Zubaidah, S. (2019). A Survey of High School Students' Scientific Literacy Skills in Different Gender. In *Journal of Physics: Conference Series* (Vol. 1241, No. 1, p. 012043). IOP Publishing.

- OECD. (2003). *PISA 2003 Assessment and Analytical Framework: Mathematics, Reading, Science, Problem Solving, Knowledge and Skills*.
- OECD. 2009. *Doing Better for Children*. OECD, Paris.
- OECD. (2013). *PISA 2012 Assessment and Analytical Framework: Mathematics, Reading, Science, Problem Solving and Financial Literacy*. OECD Publishing.
<http://dx.doi.org/10.1787/9789264190511-en>.
- Peraturan Menteri Riset, Teknologi, Dan Pendidikan Tinggi Republik Indonesia Nomor 38 Tahun 2019 tentang Prioritas Riset Nasional Tahun 2020-2024
- Rintaningrum, R. (2009). Literacy: Its Importance and Changes in The Concept And Definition. *TEFLIN*, 20(1).
- Sari E S, Suryaman, M, and Lestyarini, B. (2013) Model Multiliterasi dalam Perkuliahan Bahasa dan Sastra Indonesia *Litera* 12. 246–55
- Sari, R. H. N., & Wijaya, A. (2017). Mathematical Literacy of Senior High School Students in Yogyakarta. *Jurnal Riset Pendidikan Matematika*, 4(1), 100-107.
- Schleicher, A. (2019). *PISA 2018: Insights and Interpretations*. OECD Publishing.
- Schleicher, A., Zimmer, K., Evans, J., & Clements, N. (2009). *PISA 2009 Assessment Framework: Key Competencies in Reading, Mathematics and Science*. OECD Publishing (NJ1).
- Solihin L, Utama B, Pratiwi I and Novirina N. (2019). *Indeks Aktivitas Literasi Membaca 34*. Jakarta: Pusat Penelitian Kebijakan Pendidikan Dan Kebudayaan Badan Penelitian Dan Pengembangan Kementerian Pendidikan Dan Kebudayaan.
- Sunaryo Kartadinata. (2007). Teori Bimbingan dan Konseling *Seri Landasan Teor. Bimbing. dan Konseling* 1–14.
- Suryaman, M. (2015). Analisis Hasil Belajar Peserta Didik Dalam Literasi Membaca Melalui Studi Internasional (Pirls) 2011 Litera 14
- Toharudin, U., Hendrawati, S., & Rustaman, A. (2011). *Membangun Literasi Sains Peserta Didik*. Bandung: Humaniora.
- Wiedarti, Pangesti D. (2016). *Desain Induk Gerakan Literasi Sekolah*. Kemendikbud.