

Evaluation of School Literacy Movement Program at Cimahi City in Facing Industrial Revolution 4.0

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Abstract: The quality of people's literacy is the main requirement needed in facing the Industrial Revolution 4.0. For this reason, a literacy tradition needs to be developed since early age through educational instruments. Currently, the efforts to increase literacy among students are ongoing, one of which is through the School Literacy Movement Program initiated by the government since 2016. However, the program implementation still needs to be monitored and evaluated periodically by involving all existing stakeholders. This research is aimed to conduct evaluative study to School Literacy Movement program that has been implemented by schools using a qualitative approach. The analysis unit of this study is Junior High Schools located at Cimahi City, West Java Province. By using CIPP (Context-Input-Process-Product) method, this research is conducted to describe and evaluate the School Literacy Movement program including 5 indicators needed to face the challenges of the Industrial Revolution 4.0, namely information literacy, multiliteracy, new literacy, digital literacy and web literacy. This research will hopefully be able to identify and assess various aspects of literacy activities implemented in schools systematically and comprehensively, so that the results can be used as valuable inputs for all education stakeholders to improve the quality of the existing literacy program. Further research to strengthen the existing school literacy movement program is focused on intensive and long-term programs that will improve student literacy skills throughout Indonesia.

Keywords: *school literacy movement, program evaluation, information literacy, multiliteracy, web literacy*

Introduction

The Industrial Revolution (IR) 4.0 is a product of human civilization that today impacts various sectors of life. Not only to the way of working in the business world, or how to communicate in the social sphere, but also to the way of learning in the education sector. The term of IR 4.0 was initially emerged from manufacturing industrial world, which was a *high-tech* strategy of Germany in managing its future industries. This is marked by the presence of *Internet of the Things (IoT)*, *Cyber Physical Systems*, *the Internet of Services* and *Smart Factory* [1].

However, today education world has also adapted the spirit of IR 4.0 into a concept called Education 4.0. This concept basically arises in order to prepare the supply of well-educated human resources whose some skills needed by the market of industry 4.0. Consequently, the vision and orientation of learning are required to transform. Fisk [2] stated that the vision of learning today is not only oriented to make students be able to master the skills and knowledge needed, but also to encourage them to be able to identify and utilize learning resources to result their skills and knowledge.

In this regard, Fisk mentioned nine trends in Education 4.0. *First*, the learning activities can be conducted anytime and anywhere. *Second*, the learning of each student becomes more personal. *Third*, each student may decide his/her own way of learning. *Fourth*, students will be more exposed to do project-based learning. *Fifth*, students directly learn through field experience. *Sixth*, students will be more exposed to interpret data using their reasoning abilities and theoretical knowledge. *Seventh*, student's learning performances will be evaluated by new

assessment method instead of conventional methods. *Eighth*, students have opportunities to be involved in designing and updating curriculum. *Ninth*, students will become more independent in learning so that the teacher's function will only be as a facilitator in the learning process.

Student's ability to identify and utilize learning sources stated by Fisk above is the realm of literacy skills that should be owned by all students today. Literacy programs at school should not merely be understood as activities oriented to build reading and writing skills, but also broader activities including a thinking skill in using knowledge sources in various forms such as printed, visual, digital, and audio.

These abilities are in line with the need for 21st century literacy skills and at the same time also linear with the challenges of the Industrial Revolution 4.0, where the concept of literacy today reflects the ability in using technology to collect and communicate information. Furthermore, the International Reading Association (IRA) stated that a student called *literate* is if he/she has proficiency in technological literacy used in the 21st century [3]. Some forms of 21st century literacies include: *Information literacy, Multiliteracies/Multiple Literacies, New Literacy, Digital Literacy and Web Literacy*.

First, information literacy is addressed to a student's ability to search, evaluate and use the information needed effectively. *Secondly*, multi-literacy is addressed to literacy capabilities including various abilities such as producing texts, audios and videos as well as the ability to communicate and disseminate them. *Third*, new literacy is related to a student's ability to use new technology in collecting and communicating information. *Fourth*, digital literacy reflects the ability to locate, evaluate and share content using information technology and the Internet. *Fifth*, web literacy is related with the ability to use skills in searching, analyzing and communicating information found online.

The issue of this research is whether the School Literacy Movement program currently runs effectively in implementing the five forms of 21st century literacies? To answer this question, researcher has conducted an evaluation research on the implementation process of School Literacy Movement program in schools using CIPP (*Context, Input, Process, Product*) model formulated by Stufflebeam [4] to determine the effectiveness and sustainability of the program. This model provides a systematic way to assess various aspects of educational activities in schools in a comprehensive way [5] (Patil and Kalekar, 2015). Below is the research framework:

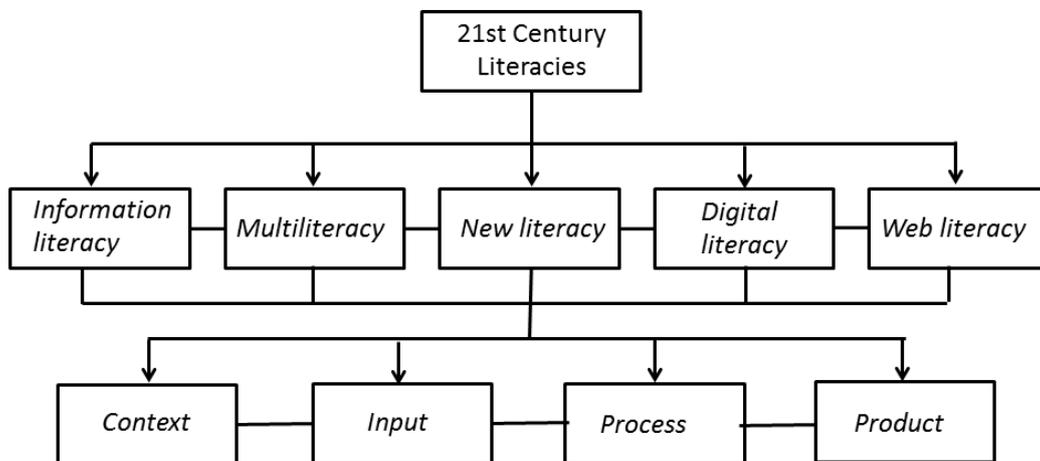


Fig. 1. Research framework

Method

This research uses an evaluation research method. The evaluation research model used in this study is CIPP (*Context, Input, Process, Product*). This model is regarded relevant to describing and evaluating the effectiveness and sustainability of the School Literacy Movement program. The dimension of the CIPP model in program evaluation are: (1) Context Evaluation; (2) Input Evaluation; (3) Process Evaluation; and (4) Product Evaluation.

The research took case studies in several junior high schools in Cimahi City, namely SMP Negeri 2, SMP Negeri 5, SMP Negeri 10, SMP Pasundan 2 and SMPK BPK Penabur Cimahi.

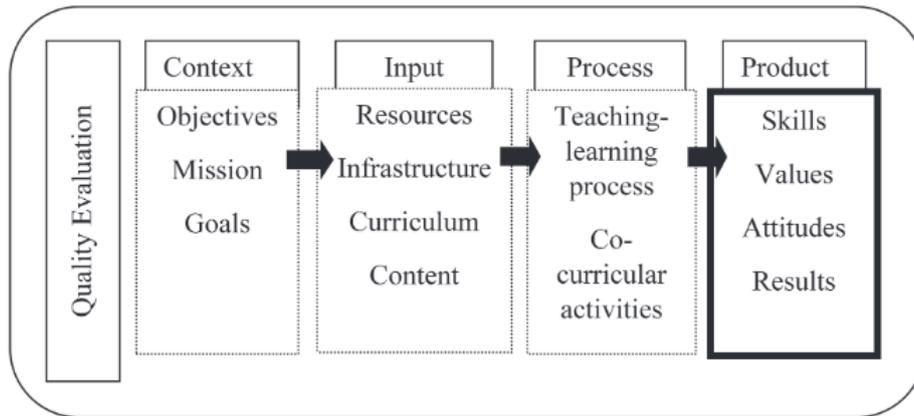


Fig. 2. Conceptual framework of implementation of the CIPP model for quality evaluation [6]

Results and Discussion

The School Literacy Movement program in Cimahi City has been running for around three years. Conceptually, the School Literacy Movement program for junior high school level is carried out through 3 stages, namely habituation, development and learning. The habituation phase is implemented as a suggestion to foster student’s interest in reading through 15-minute reading activity. The development phase is carried out to increase literacy skills through activities responding to enrichment books. While the learning phase is oriented to improve literacy skills in all subjects, namely using enrichment books and reading strategies in all subjects.

As for the context of digital literacy in schools, the Ministry of Education and Culture has formulated its own strategy. First, by strengthening the capacity of the facilitator. Second, by increasing the number and variety of quality learning resources.

In an effort to increase the number and variety of quality learning sources, existing schools are advised to carry out several strategies, including: (a) adding reading material of digital literacy in school’s library; (b) providing educational sites as a learning source for school members; (c) using educative applications as a learning source for school members; (d) making wall magazines in classrooms and school yard.

Furthermore, in order to expand the access to quality learning sources and scope of learning, there are at least two suggested strategies. First, by providing computers and internet access at schools. Secondly, by providing information through digital media.

In general, schools in Cimahi City have provided the facilities needed to run and develop digital literacy programs. Standard school facilities such as computers, internet access and digital reading materials in the library are sufficient.

However, each school has different intensity and effectiveness in implementing digital literacy programs. The government has only been at the stage of providing guidance on the concepts and strategies for implementing the program, but has not paid enough attention to the distribution of literacy qualities in all schools. So that each school runs the program in accordance with their respective capacities.

The quality of school literacy programs tends to be linear with overall school academic achievement ratings. Leading schools whose high academic achievement in Cimahi City tend to pay more attention to the quality of their literacy programs compared to schools whose low academic achievement. This is because they have realized that the quality of the school literacy program is an important variable in gaining an institutional reputation, and for private schools it is part of their *marketing strategy*.

The difference in the implementation's quality of school literacy programs in Cimahi City is strongly influenced by several factors, including:

- The ability of schools to provide facilities in supporting literacy programs
- The ability of human resources, especially teachers in being a facilitator as well as a motivator
- The ability of schools to translate literacy programs in curricula and teaching-learning activities as well as extracurricular and co-curricular activities.
- The role of school leadership and stakeholder participation.

There are five types of the 21st century literacies that researcher used as indicators of student literacy skills in this study, namely Information Literacy, Multiliteracies/Multiple Literacies, New Literacy, Digital Literacy and Web Literacy.

Information Literacy

Information literacy is the ability of individuals to identify, search, evaluate, organize, and effectively create, use and communicate information [7]. To be literate information, individuals must be able to search, evaluate and use the information needed effectively.

In context perspective, the GLS program in developing information literacy in each school generally only refers to the goals and mission of the literacy program that has been conceptualized by the Ministry of Education and Culture. The schools mostly still tends to understand information literacy in term of reading 15 minutes every morning, writing reviews, or in the context of finding information to support school assignments.

In terms of input, infrastructure and resources supporting information literacy are sufficient, for example the availability of computers, internet access and books in the library. In the implementation process, information literacy has also been sufficiently integrated in teaching and learning activities and extra or co-curricular activities.

For junior high school's students who are mostly included in Z generation cohort, which is *digital native*, it is proper for them to be able to use digital devices to search for information. However, the level of information literacy they have is still limited to searching for information, on the contrary not yet in producing and disseminating the information actively and effectively. Perhaps some students are individually active in producing and disseminating information, but this ability level has not been developed systemically through literacy programs in schools.

Multiliteracies

Multiliteracies are the abilities in using various ways to communicate and create meaning, including in the form of visual, audio, spatial, behavioral and gestural [8].

Multiliteracies reflects the impact of communication and multimedia technology on the nature of evolving texts [9].

In context perspective, the GLS program in junior high schools in Cimahi city has mostly been oriented towards developing student's multiliteracies. This is because schools are mostly aware that their students today are digital natives who are accustomed to living daily not only by text, but also by video, audio visual and so on.

In input perspective, unfortunately the resources and infrastructures provided by the schools are not sufficient enough to support all complex multiliteracy activities. For example, in doing short-movie production assignment, students individually use their own technological equipments to support it.

In the implementation process, the student's multiliteracy activities carried out in various forms. For example in learning activities, students were assigned to make a short video and a power-point presentation. There are even schools that give assignments to their students to make short-films and show them at school. In the form of text and images, they also create and publish school journals, bulletins and magazines.

In term of the product evaluation, in fact some students have produced multiliteracy products in the forms of texts, audios, videos and so on. However, these products are still limited as the student's works in group where each group member personally has an interest in the field, as well as supported by personal facilities, but can not be done by all students whose the different economic capabilities and facilities.

New Literacy

Coiro et al. [10] defines new literacy as the use of new technology to collect and communicate information. The term new literacy is used to describe how digital technology and the environment are generally used, as well as how the technology changes the lives of individuals and society as a whole. It deals with the functions of hardware and software, each of which has character and affordability in its use [11].

In terms of context, the schools mostly have goals and missions to build new literacy skills for their students. The new literacy skills are not only technically oriented, but also become part of the awareness and practice of life in the social world.

In terms of input, in general the information and communication technology infrastructure provided by the schools meets the standards for indoor learning. However, new literacy abilities are associated with broader social dimensions, including with the industrial world. In this case, the schools have not been owned enough resources to support the new broader literacy capabilities.

In terms of process, the GLS implementation in order to improve new literacy skills has not yet been carried out integrally and synergistically, especially with existing external stakeholders, namely society and the industrial world. Although the school level is still junior, the collaboration with external stakeholders should be begun to be introduced so that they have awarenesses of the industrial world early on.

In product perspective, the students mostly have new literacy knowledge and skills just in individual portions and still tends to be self-oriented. In the contrary they have not yet realized that their new literacy skills are oriented towards facing IR 4.0 and facing greater challenges in the global world.

Digital Literacy

Digital literacy is the ability to find, evaluate, utilize, share and create content using information technology and the internet [12]. Meanwhile Ba and Colleagues in Osterman [13] define digital literacy as a set of habits in which children use information technology to learn, work, and have fun.

Steve Wheeler in Puspito [14] mentions nine important element in digital literacy, namely: social networking, transliteracy, maintaining privacy, managing digital identity, creating content, organizing and sharing content, reusing or repurposing content, filtering and selecting content and self broadcasting.

In context perspective, digital literacy program has become inseparable part of the literacy movement in schools. Even the government has provided several guidebooks in carrying out digital literacy activities.

In term of input, the infrastructure facilities supporting this program are also available in standard portions: computers, internet, and library facilities. Digital literacy in a modest level has been carried out by the majority of schools in Cimahi city. Although in terms of the implementation process, each school is not the same.

In term of product evaluation, digital literacy ability possessed by students is still limited to finding information or spreading content. However, these skills are still not enough with the skills demanded by IR 4.0. The student's digital literacy skills have not yet led to certain marketable skills in the industrial world, because the digital capabilities are mostly still limited to helping with learning assignments and for fun.

Web Literacy

Web literacy is related to person's specific skills in searching, analyzing and communicating information found online. Laura Hilliger [15] mentions five types of activities using the web, such as e xploring, authoring, connecting, building and protecting.

In term of context, the literacy ability of creating and filling the web is not a priority program of the school literacy movement. Even in the book of *Materi Pendukung Literasi Digital* [16] not mentioned explicitly about web literacy.

In input perspective, actually the resources and supporting infrastructure are sufficient, because creating webs is not a difficult job. Just by providing computer facilities, internet access, ICT teachers or web-making instructors, it can be easily done.

However, in the implementation process the web literacy program is just limited in term of student's assignment, where students are given the task to create a personal website or blog. However, the schools do not provide web-making training facilities for students.

Although making a web may not be a difficult activity for junior high students who are all digital native, but as stated by Laura Hilliger that activities using the web are not limited to making, but also filling in their content, maintaining and developing and protecting it. The schools should provide training for students so that they are able to create, maintain, develop and capitalize them, not just for assignment or pleasure.

The 21st century literacies are not only limited to reading and writing contexts, but broader than that. Frankel, et al. interpreted literacy as the process of using reading, writing, and oral language to extract, construct, integrate, and critique meaning through interaction and involvement with multimodal texts in the context of socially situated practices [17].

There has been a paradigm shift in interpreting literacy. First, literacy is not only related to the process of productive activities (such as writing and speaking), but also to receptive

activities (such as reading and listening). Second, reading activities are carried out in the context of social practices including writing, speaking and listening, as well as the activities that have been rooted socially, culturally and historically. Third, at schools, the context of literacy is related to scientific disciplines, obtained through epistemology, research, conceptual frameworks and languages. Fourth, something that goes beyond written language can create unique complications and possibilities to literacy practices.

In relation to the curriculum, literacy is defined as socially organized practices (that) make use of a symbol system [18]. In this case, the literacy curriculum consists of a set of socially organized symbolic practices which are always selective and related to school functions.

In the era of Industrial Revolution 4.0 and Education 4.0 today, literacy skills have been associated with the ability of individuals to utilize information and communication technology (ICT). In education world, the parameter of a student called *literate* is when he/she has proficiency in technological literacy commonly used by people in the 21st century.

Conclusion

The School Literacy Movement program in junior high schools in Cimahi City which is oriented to develop 21st century literacies including information literacy, multiliteracy, new literacy, digital literacy and web literacy in general has been implemented in accordance with their respective capacities school.

In school context, each school mostly just followed the objectives and the missions of the program that had been formulated and conceptualized by the government (Kemendikbud), including for digital literacy capabilities. In terms of input, in fact the resources and infrastructures provided by the schools have also been sufficient to meet the standards, but only limited to supporting literacy activities in the classroom or inside the school and the portion is still relatively simple.

Evaluation of the products resulted by the GLS program is that this program is still limited in providing literacy skills at the individual level for school assignments, information seeking and personal enjoyment of students, but it has not been focused on fulfilling the skills required by IR 4.0. Therefore, the next GLS's programs can hopefully be improved and its orientation is focused on providing students with the skills demanded by IR 4.0.

The results of this study can be used as a basis for developing more intensive and long-term literacy programs. Therefore development research is needed to strengthen existing programs. Strengthening GLS with intensive and long-term programs will improve student literacy skills throughout Indonesia. Thus, a comprehensive literacy program is a projection of further research from this research.

References

- Erik Hofmann & Marco Rüsç. (2017). "Industry 4.0 and the current status as well as future prospects on logistics. *Computers in Industry*". 89. 23-34. 10.1016/j.compind.2017.04.002
- Anealka Hussin. (2018). "Education 4.0 Made Simple: Ideas for Teaching". *International Journal of Education and Literacy Studies*. 6. 92. 10.7575/aiac.ijels.v.6n.3p.92.
- Jodi Pilgrim & Elda Martinez. (2013). "Defining literacy in the 21st century: A guide to terminology and skills". *Journal of Literacy Education*. 1. 60-69.
- Thomas Kellaghan, et al. (2003). *International Handbook of Educational Evaluation*. London: Kluwer.

- Yogesh Patil & Sunil Kalekar. (2015). "CIPP Model for School Evaluation". *Scholarly Research Journal for Humanity Science & English Language*. June-July, 2015, Vol. 2/10, 2615-2619.
- Shamsa Aziz, et al. (2018). "Implementation of CIPP Model for Quality Evaluation at School Level: A Case Study". *Journal of Education and Educational Development*, Vol. 5 No. 1 (June 2018), 189-206
- Sirje Virkus et al. (2005). "Information Literacy and Learning". https://www.researchgate.net/publication/228411535_Information_Literacy_and_Learning
- Bill Cope and Mary Kalantzis. (2009). "Multiliteracies: New Literacies, New Learning". *Pedagogies: An International Journal*, 4: 164–195, 2009. online DOI: 10.1080/15544800903076044
- Benjamin Boche. (2014) "Multiliteracies in the Classroom: Emerging Conceptions of First-Year Teachers". *Journal of Language & Literacy Education* Volume 10 Number 1, 2014.
- J. Coiro & E. Dobler. (2007). "Exploring the online reading comprehension strategies used by sixth-grade skilled readers to search for and locate information on the Internet". *Reading Research Quarterly*, 36, 378-411.
- Michael A. Peters. (2019). *Encyclopedia of Educational Philosophy and Theory*. Singapore: Springer.
- Cornell University (2009). Digital literacy resource. Retrieved from <http://digitalliteracy.cornell.edu/>
- M. D. Osterman (2012). *Digital literacy: Definition, theoretical framework, and competencies*. Dalam Plakhotnik, et.al. (Ed). *Proceedings of the 11th Annual College of Education & GSN Research Conference* (pp. 135-141). Miami: Florida International University.
- Danang Wahyu Puspito. (2017). "Implementasi Literasi Digital Dalam Gerakan Literasi Sekolah". International Conference on Language, Literature, and Teaching, Semarang, 10 October 2017.
- Laura Hilliger. (2012). "Web Literacy in Adults: An Educational Approach Using Game Mechanics in Curriculum to Teach Web Literacy in Adults". Thesis University of Rostock, Dresden, July 2012.
- Kemendikbud. (2017). *Materi pendukung Literasi Digital*. Jakarta: Kemendikbud.
- Katherine Frankel, et al. (2016). "From 'What is Reading?' to What is Literacy?" *Journal of Education*. 196. 7-17.
- Kathy Mills & Len Unsworth. (2015). *The Literacy Curriculum: A Critical Review*. https://www.researchgate.net/publication/301294293_The_Literacy_Curriculum_A_Critical_Review/link/57106a9a08aefb6cadaaaa5b/download.