



## DESIGNING CHATBOTS FOR DIGITAL BOOKS AT SABAH COMMUNITY SERVICE CENTER

Suciana Wijirahayu<sup>1</sup>

English Education, Graduate School, Universitas Muhammadiyah Prof. DR. HAMKA, Jakarta, Indonesia  
sucianawijirahayu@uhamka.ac.id

Emilia Roza<sup>2</sup>

Engineering Faculty, Universitas Muhammadiyah Prof. DR. HAMKA, Jakarta, Indonesia

Article history:	Abstract:
<b>Received:</b> June, 15 <sup>th</sup> 2022 <b>Accepted:</b> July, 24 <sup>th</sup> 2022 <b>Published:</b> August, 14 <sup>th</sup> 2022	The problem faced by the teachers from the Community Center at Sabah-Malaysia after mentoring in making e-books is the continuity of creative development and improving the quality of digital textbooks produced. So it is necessary to develop the technology of teaching included in digital books. It can motivate the students to be more independent and encourage teachers to be more creative. The artificial intelligent media used to support the e-book in this study is the Chatbots.

**Keywords:** Chatbot, digital literacy, creativity, digital book writing, community service center

### 1. INTRODUCTION

Teachers' creativity in developing students' learning motivation in Community Service Center is a sustainable process. Using the e-book written by the teachers in the classes in the previous study, there are obstacles to completing the e-books with more practice. It is the need for media to enrich content. The continuity of teacher actualization is necessary to foster it by strengthening the partnerships in utilizing technology, especially Chatbots for teaching media in writing e-books.

Media for teaching illustrated in the instructional can increase creativity in learning languages (Wijirahayu, S, Priyatmoko, Hadiani, 2019). Wijirahayu, added in the article that communication between lecturers and students by writing is part of the critical thinking process. According to Kerly, A., Hall, P. & Bull, S. (2006) Chatbot is a technology that has developed significantly. We have also implemented chatbots through social networks such as Twitter and Windows Live Messenger or within network portals. Popular platforms like eBay and PayPal also use multilingual virtual agents to make it easier for users. For example, PayPal uses Chatbot Louise to process inquiries in English.

To improve the quality of educational attainment is the continuous efforts of the entire academic community. It is part of the expectations in the vision and mission need to be supported by the internalization of research results under community expectations. One mission is building the character of the learners with e-book and chatbot as one of AI technology.

### 2. METHODS

The method used in this study is Research and Development. It is to overcome the problem in classes, after the teachers using the e-book they have written. A Chatbot is an implementation in Natural Language Processing (NLP), machine learning, software engineering, and artificial intelligence whose development works by working. When a natural language input comprises several words with unequal arrangements in the sentences, it can also learn the input, which has the same meaning as the previous input, which in this chatbot system can respond with an appropriate reply to the question. Chowdhury, G. (2003) said that Natural Language Processing which AI is a part of is a field of research and application that explores how computers can understand and use multimodal text.

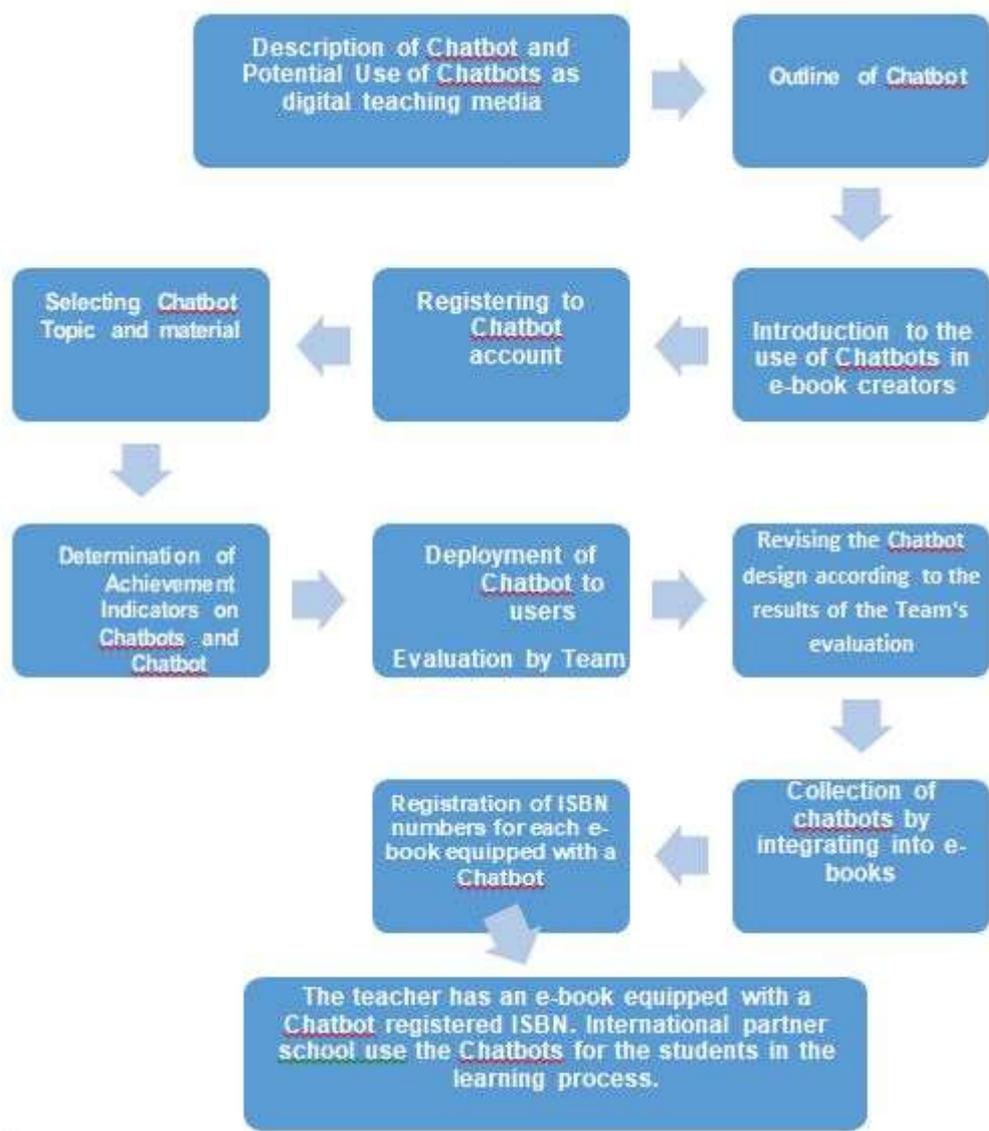
Forty teachers of Indonesian and Malaysian at CLC FGV Sahabat were involved in this study. They divided themselves into nine teams. In the virtual training, we apply some platforms to develop the skill and creativity in developing Chatbot as additional tools for the e-book. They are Zoom meetings, Google class, group WhatsApp, and YouTube.

In designing Chatbot, we use multimodal text because of its essential function. It is as words, images, sound, music and YouTube video. Using multimedia and videos from YouTube developed the character in language learning (Wijirahayu & Syarif, 2020).

We can learn concepts with technology as it is very flexible anywhere and anytime. In this study, the students can access the material in the e-book and Chatbot through gadgets as part of supports practical knowledge of ICT installed in their classrooms. A text does not merely combine words but a combination of other media in a multimodal text (Wijirahayu, 2021).

Teaching media influence the engagement in the teaching-learning process, especially in virtual class. It decreases the anxiety (Wijirahayu and Kamilah, 2021). There is a potential to build the character of the millennia by giving them challenges to learn local wisdom through teaching media exploration (Wijirahayu & Muliya, 2022).

Besides the things above, one thing that is useful as a benchmark for the effectiveness of textbooks in learning is books' readability (Wijirahayu & Roza, 2022). As an enrichment for the e-book produced by the teachers, we design some chatbots for them. The process of designing the Chatbot is in the figure below.



Wijirahayu (2022)

Figure1. The process of Chatbot Training and production

### 3. RESULTS AND DISCUSSION

Although, in the beginning, most of the participants were not familiar with Chatbot, they admitted Chatbot as one of the alternative tools to enrich the function of the e-book. There are nine Chatbot accounts from the teachers available to design to fulfill the need of various subjects taught in the community. It is one application to motivate the student in the learning process.

#### 3.1 Virtual mentoring in designing Chatbot in Zoom meeting and Google class

The teachers at CLC FGV Sahabat and other participants are assigned to create an outline for Chatbot related to their e-book during the mentoring. We provided Zoom meetings and classes in Google. The tutor showed tutorial how to combine words and pictures in designing the chatbot. Some participants were successful in following the steps. They posted the link of the chatbot after registering with the invite code provided by the committee (AI4IMPACT). They also put the outline of the chatbot created in the group at Goggle class. It was after they were familiar with the application and discussing in their group.

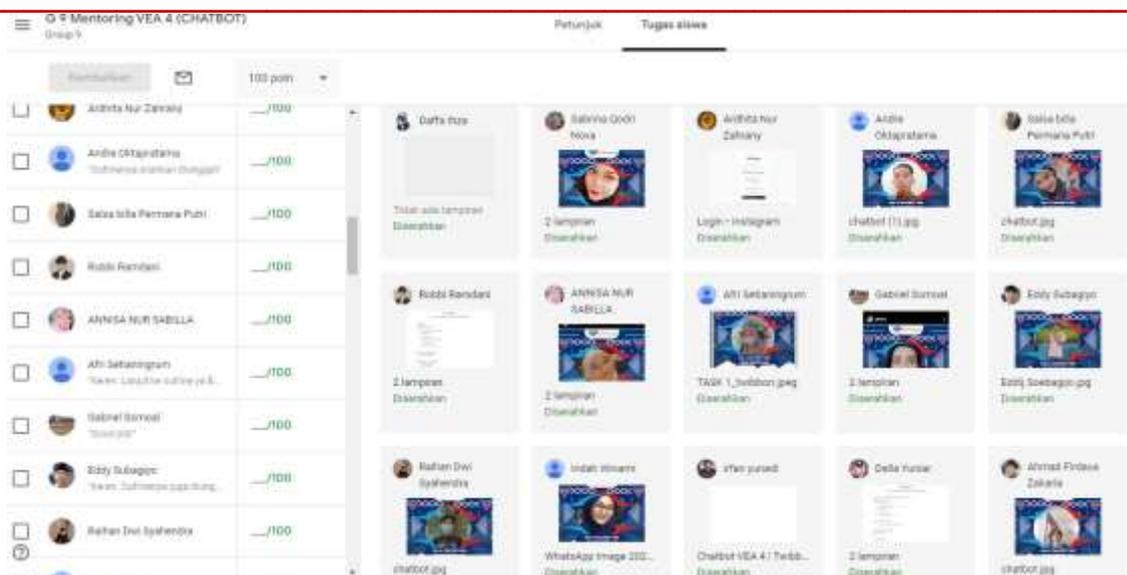
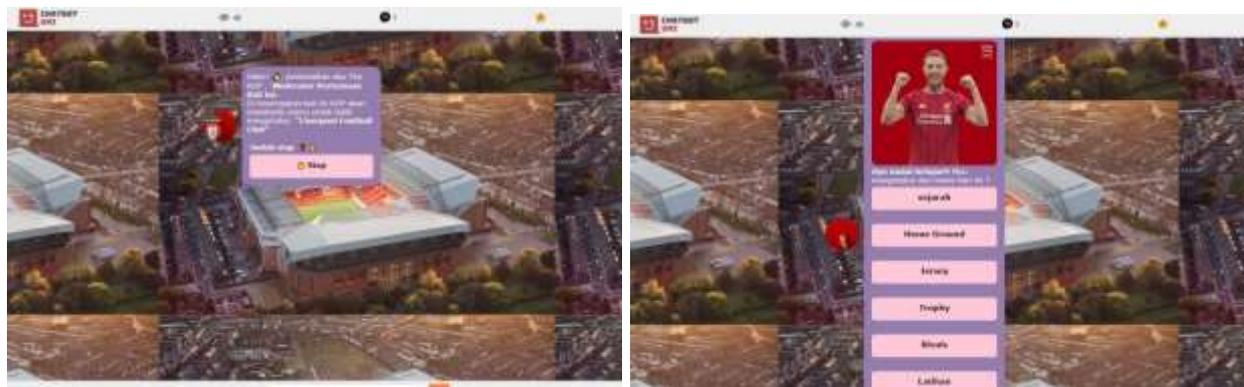


Figure2. Creating an account and outline in Chatbot and submitted at Google class

### 3.2 Personal Task

The participants of the study have chosen various themes for their e-books. It included language, culture, mathematics, energy, environment, religion, and other topics. They have written some chapters suitable to the theme. They performed the skill to use multi-modal (text, pictures, voices, and videos) in the virtual books that they have written (Wijirahayu & Roza, 2022). Although fulfilling the assignment to submit their task is still challenging after 8 weeks, their enthusiasm is high in providing the e-book with a chatbot as enrichment.

Fulfilling the need to design chatbot for various subject we prepare a model. For Sport subject, we set the chatbot Liverpool Football club in figure 2 to be a model. We also prepare Chatbot Blood and Circulation in figure4 as a model for the subject of biology. Figure5 is about a chatbot with the theme Computer Program. It is a chatbot as a model for Science and Technology.



Figur3. Sport as the theme of the Chatbot

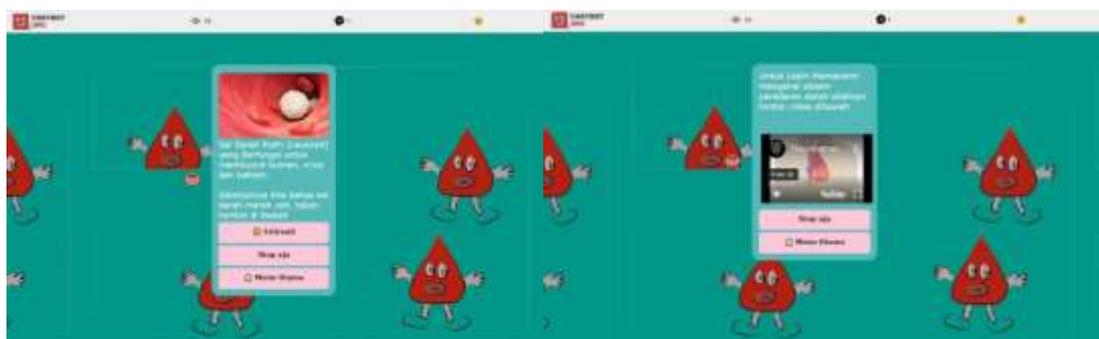


Figure4. Blood Circulation System as the theme of the Chatbot

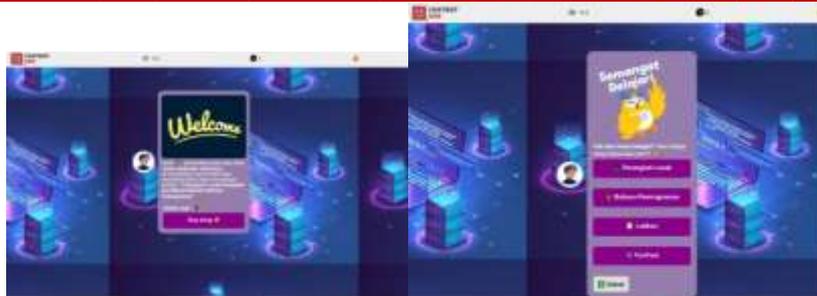


Figure5. Computer Program as the theme of the text book

### 3.3 Collaborative Action

To maintain the spirit of the participants to overcome the challenges, we encourage all the teachers at CLC FGV Sahabat to collaborate with other participants from different field of study. They are students from Engineering and Public Health Faculty and Pre-service teachers. We provide a model of chatbot for e-book. We also use group WhatsApp to have more intensive communication between the participant, the researcher and the teams. The figures below show parts of participant’s group performance in Book Creator library.

Chatbot is containing AI languages, therefore it is challenging to design. In this mentoring system, each member in the group has a different task in designing chatbot, yet in completing the task successfully, active collaboration is beneficial. The figure6 shows part of the participant’s group performance in designing chatbot for History subject. It is a model for some e-book with the themes culture and religious activity produced by the teachers in figure7.



Figur6. The function of History in AI Quran as the theme of the Chatbot



Figure7. Culture and Religious activity as the theme of the text book

The Chatbots produced as enrichment for the e-book contain material for students character building. A writer

should consider some important aspects in developing the material and teaching media at CLC FGV Sahabat is prepared for youth at primary and secondary school. In preparing content and context for the e-book, especially for online learning, a writer should consider the syllabus and lesson plan suitable to the students (Wijirahayu & Emilia, 2022). It depends on the situation and the goal of the instructional design (Wijirahayu, 2022). The values in the texts provided in resources will influence the learners' perception and engagement with the message from the writer (Wijirahayu & Muliya, 2022). The figure below with the theme 'A Way to Stay Productive during Fasting' shows a chatbot produced as a model to build the student character.



Figure8. A Way to Stay Productive during Fasting as the theme of the Chatbot

The teachers should analyze the learning materials that are tailored to each character value to the aim that the learning materials and the output produced in accordance to the needs of the community (Abute, Koba'a, & Lamadang, 2022). Youth are agent of change, carriers of generation of change for world civilization (Ibrahim, Rahmat, Isa, Husain & Zubaidi, 2022). Therefore, the teachers' creativity and skill in developing media is essential to enhance students' HOT skill (Wijirahayu, Priyatmoko, Hadianti, 2019). It is useful for critical reading activity in junior high English classes (Wijirahayu and Armiati, 2020). Figure0 showed chatbot produced for math e-book produced by the CLC FGV Sahabat that showed in figure10.



Figure9. Math as the theme of the Chatbot



Figure10. Fun Mathematics as the theme of the text book

Chatbot can provide exercise in it to strengthen the students' memory of the lesson discussed in the e-book. The aim is to "Writing a syllabus also requires some precision, such as how much time is given for each assignment in the lesson, its purpose, student engagement, social forms to be used, teaching materials, media, and teacher activities", (Kakharova and Yusopova 2022). Figure11 shows the e-book written by the teachers with the theme language and culture. It is supported with the chatbot in English in figure 12.

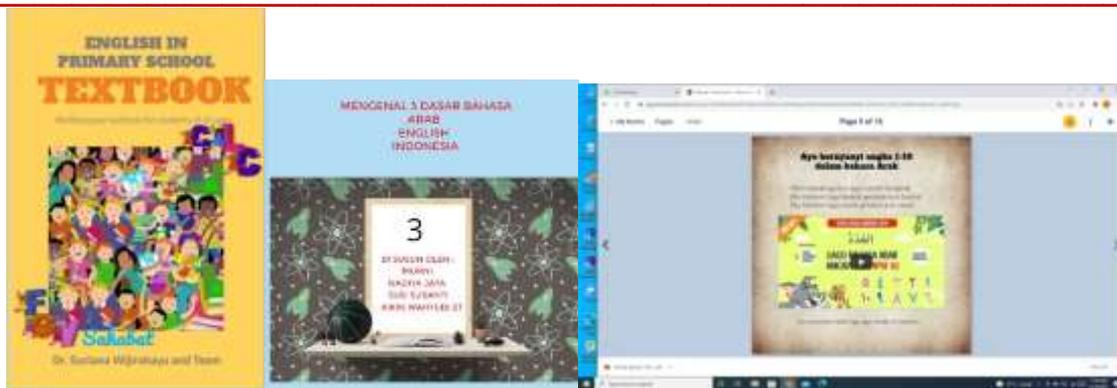


Figure11. Group task with languages and culture as the theme



Figure12. English as the theme of the Chatbot

Efforts to support the students learning proses by designing Chatbot as an enrichment tools for e-book are parts of teachers’ creativity. It will be beneficial if it is developing sustainably. Wijirahayu (2021) argued that the target competence of the students is one consideration in selecting multimodal material. Teachers’ mindset has a strong influence to support the students with updated media in teaching-learning process.

**4. CONCLUSION**

A Chatbot created by the teacher as the ongoing process of developing the teacher's literacy and creativity through virtual training is challenging. It is an effort to support the teachers in providing supplementary material for their e-book with AI application to increase their digital literacy and develops their creativity. The High spirit of teachers at CLC FGV Sahabat in creating various interactive e-books through this research and development will be broader through the AI digital insight, especially during the collaborative chatbot designing. The selected themes, texts, pictures, and video inserted in the e-book and Chatbot produced by the teachers who took part in this study reflected their literacy in utilizing the application and creativity in developing the teaching material suitable to the selected themes. The teacher's high motivation and enthusiasm are professional enhancement. Further study is Collaboration in increasing the quality of the teacher e-books and their Chatbot suited to the target learners' competencies and the syllabus recommended by the stakeholders.

**5. BIBLIOGRAPHY**

1. Clarke, J., Dede, C., Dieterle, E. (2008). "Emerging Technologies for Collaborative, Mediated, Immersive Learning", International Handbook of Information Technology in Primary and Secondary Education. Springer Science+Business Media, Bostan
2. Chowdhury, Gobinda G. "Natural Language Processing", Information Science and Technology vol. 37, pp. 51-89, 2003.
3. Gee, P. J. & Hayes R. E. (2011) Language Learning in Digital Age. Routlege. New York.
4. Harmer, J. (2012). *The Practice of English Language Teaching*. New York: Pearson Longman.

5. Hanifah, U. (2021). *Pentingnya Buku Ajar yang Berkualitas dalam Meningkatkan Efektifitas Pembelajaran Bahasa Arab*. At-Tajdid Jurnal Pendidikan dan Pemikiran Islam 3(1):99-121
6. Ibrahim, F., Rahmat, A., Isa, A. H., Husain, R., & Zubaidi, M. (2022). RELATIONSHIP BETWEEN INTERNSHIP AND ENTREPRENEURIAL SPIRIT WITH YOUTH INDEPENDENCE IN PARIS VILLAGE, GORONTALO REGENCY.
7. Kakharova, M., & Yusupova, D. (2022). NEW APPROACHES TO LESSON PLAN.
8. Kerly Alice, Hall & Bull Susan Phill. *Bringing chatbots into education: Towards natural language negotiation of open learner models. Knowledge-Based Systems 20* (2007) 177–185. 2006.
9. Lamadang, K. P. (2021). CHARACTER DEVELOPMENT OF PRIMARY SCHOOL STUDENTS'ISLAMIC SOCIETY OF INTEGRATED LEARNING THROUGH ONLINE LUWUK.
10. Millington, N.T. (2011). *Using Songs Effectively to Teach English to Young Learners*. Language Education in Asia 2(1), pp. 134-141.
11. Oxford, R.L. 1990. *Language-learning Strategies: What Every Teacher Should Know*. New York Newbury House Publisher.
12. Richards, J.C., and Renandya, W.A. (2002). *Methodology Language Teaching: An Anthology of Current Practice*. New York: Cambridge University Press.
13. Shaffer, David E. (2004). *The Effectiveness of Song-Based EFL Instruction at the Tertiary Level*. STEM Journal, 5(2), pp. 83-100.
14. Wijirahayu, S. (2017).*Strategi Belajar Bahasa Inggris sebagai Bahasa Asing dari Perspektif Keyakinan Guru*.Artikel dipresentasikan di Konferensi Nasional Pascasarjana PTM ke-5 di Sidoarjo.
15. Wijirahayu, S., Priyatmoko, H., Hadianti, S. (2019) *Critical, Logical & Creative Thinking in a Reflective Classroom Practices*. International Journal of English Teaching (IJET) volume. 8, Issue 1. June 2019
16. Wijirahayu, S., & Ayundhari, V. L. (2018). Classroom Experiences of Creative Thinking. In *UICELL Conference Proceeding* (No. 2, pp. 207-220).<sup>1</sup>
17. Wijirahayu, S., Syarif, M.,S., (2019) *Pengembangan Media Integratif Bahasa Inggris untuk Siswa di Pendidikan Dasar*. Jurnal SOLMA volume.8, No.2. Oktober 2019.
18. Wijirahayu, S., & Armiati, A. (2020, January). Exploring Values through Cooperative Integrated Reading and Composition. In *UICELL Conference Proceeding* (pp. 193-212).
19. Wijirahayu, S., & Kamilah, S. (2021, July). Students' Writing Anxiety, Reading Motivation and Writing Achievement during Covid-19 Pandemic. In *Proceeding of International Conference in Education, Science and Technology* (pp. 76-84).
20. Wijirahayu, S. Rokhmani, (2021) *A Case Study of Teachers' Beliefs in Assessing Young Learners Prior to Pandemic Covid-19 Situation*. Research Methodology Concept and Cases. Novateur Publication
21. Wijirahayu, S. (2022) *A Case Study of Teachers' Beliefs in Assessing Young Learners Prior to Pandemic Covid-19 Situation*. Research Methodology Concept and Cases. Novateur Publication
22. Wijirahayu.S (2022) *Mindset and Learners Literacy Development during the Covid 19 Pandemic*. Human Responsibility on Environmental Social Issues. Book Shore International. [PDF view of the file 1. Suciara Wijirahayu.pdf \(bookshore.org\)](#)
23. Wijirahayu, S., & Roza, E. (2022). DEVELOPING LITERACY AND CREATIVITY THROUGH DIGITAL BOOK WRITING AT COMMUNITY SERVICE CENTER.
24. Wijirahayu, S & Muliya, A.P. (2022). A Potential of Local Wisdom from HAMKA Literary Works in Building the Character of Millennial. Awareness to Education Changes and Content Delivery Method. Novateur Publication. [PDF view of the file CHAPTER 12.pdf \(novateurpublication.com\)](#)