Development of students' worksheet-based AR video and QR-timer test on biographical text materials Class X Senior High School 1 Pelalawan

Tengku Hamid Darmawan *, Charlina, Elvrin Septyanti
Universitas Riau, Indonesia.
* Corresponding Author. E-mail: tengkuhamiddarmawan@gmail.com

ARTICLE INFO

ABSTRACT

Student worksheets are learning tools in the form of direct assignments to simplify the evaluation process. Unfortunately, the use of student worksheets is still conventionally based and burdensome for students. The proposed innovation is the development of a student worksheet integrated with QR Code digital technology, containing AR Video, and also G-Form links with material of National Biographical Indonesian Hero which is given an automatic countdown timer test extension. This research aims to determine the increase in students' interest in learning and understanding the material after using student worksheets, provide an overview of optimizing digital content and assignments for teachers and students, as well as develop the form and function of student worksheets in a more complex manner by involving digital media in the form of AR Video and QR Code integrated Form Timer Exercises. The research model uses a 4D model (define, design, develop, and disseminate). The test subjects were 25 class X students at Senior High School 1 Pelalawan. Data sources were obtained from interviews, questionnaires for needs analysis, and results questionnaires. The data in this research were analyzed using qualitative descriptive techniques to analyze interview information and quantitative analysis techniques to process data in questionnaires for needs analysis and result questionnaires. This research had received very appropriate criteria in validating research products (90%) and received very positive perceptions from class X students at Senior High School 1 Pelalawan (88%). These exact results are expected to be developed and studied further, especially related to the relationship of this media with an increase in student learning outcomes.

INTRODUCTION

Science and technology in general is experiencing vertical development. The term Industrial Revolution, which first appeared in the 18th century in England, had a tremendous impact on digitalization globally. Further developments present branching the terms, namely Industrial Revolution 1.0, Industrial Revolution 2.0, Industrial Revolution 3.0, and Industrial Revolution 4.0 (Harahap, 2019). This development not only perfects the result of science and technological concepts but is also able to disseminate information technology on an international scale. Almost all corners of the world are influenced by technology, including in Indonesia.

Indonesia is absorbing technological demands as well, which is evidenced by the widespread provision of internet access in various regions. Based on a survey by the Indonesian Internet Service Providers Association, domestic internet has been reached by 210 million people, or 77.02 percent of the total population (APJII, 2022a). Besides that, students from the high school level have dominated the use of gadgets among students with a total of 37.69% (APJII, 2022b). This push made the range wider when the pandemic COVID-19 began to affect the world and required various activities to be carried out online (Rohana & Syahputra, 2021).

Cause of rapid development science and technology have an impact on the national education system. The education implemented is no longer conventionally based, but is also combined with digital technology. Learning evaluation activities as a benchmark for the success of students' mastery of lessons have also been transferred to digitalization (Latifah & Azrina, 2020). Various media have emerged that make the learning assessment process easier, for example, Google Form, Quizizz, Testmoz, Quizmaker, Kahoot, and Quizzlet (Mustofa, 2020). Currently, computer-based assessment is the main reference compared to manual assessment by teachers with an assessment process that is faster, easier, more flexible, and has a higher level of accuracy (Krismawati et al., 2018).

The forms of evaluation that are generally given to students in Indonesia are tests, exams, homework, and direct assignments (Febriana, 2021). Direct assignments are a form of assignment given in class to students during the available lesson hours. Often students cannot complete the assignments given in the remaining class time, so the assignments are used as homework. This homework will burden students and take up time spent with family. This form of assignment also contrasts with the K-13 Curriculum which the Independent Curriculum perfected with the same principles: creating active, efficient learning, and not burdening students (Anwar et al., 2022).

According to the results of a survey conducted by the Indonesian Child Protection Commission (KPAI), it was found that 73.2% of students considered the tasks given to be a burden. The least favorite tasks were making videos (55%), answering a lot of questions (44.5%), summarizing material (39.4%), and copying questions before answering (25.6%) (KPAI, 2020). The tasks given by teachers to students are often stuck with old methods so students find it difficult to carry out these tasks. This has an impact on the lack of interest in understanding the material and tends to forget the material after it has been completed or tested at school (Septiyawan, 2021).

One of the Indonesian language learning materials that is quite crucial and is always present in every curriculum offered is Biographical Text material in grade ten (Sapitri & Nugroho, 2022). Biographical text is writing that contains a person's life history that can be emulated in everyday life for students (Aulia & Gumilar, 2021). This text describes the beginning of a person's life–usually a hero or famous figure and then tells the life process that the character goes through until the end of his life (Rahayu et al., 2022). Therefore, biographical texts are quite long and tend to be boring if they are not combined with attentive media (Audie, 2019).

As a benchmark for students' level of understanding in analyzing biographical texts, teachers usually provide Student Worksheets (LKPD) as an evaluation medium (Novriani et al., 2021). So far, the use of students' worksheets is still done manually, namely printed first to be given to students. Furthermore, students are asked to fill in the answers to the questions listed directly by hand on the student's worksheet (Aprilianti & Astuti, 2020). As a result, it requires large costs for printing, waste of ink and paper, and waste of effective learning time because the time for working on the student's worksheet is not measurable (Novriani et al., 2021). The provision of conventional media like this also makes students tired quickly and tend to feel bored (Tafonao, 2018). Therefore, a collaboration between media and digital technology is needed in students' worksheets, involving structured evaluation and providing visualizations (Rizka, 2022), so that students are more enthusiastic about doing assignments and improving understanding according to learning outcomes (Bagaswara, 2021). Based on the problems, potentials, solutions, innovations, and status quo, the researcher will implement the Independent Curriculum students' worksheet based on AR Video and QR Code integrated with G-Form with an extension of the countdown time in grade X, especially in the Biography Text material. It is hoped that this innovation can be developed and implemented widely, so that it can contribute to realizing the 2030 Sustainable Development Goals, preparing generation

5.0 that is responsive to digital technology, and welcoming the era of Golden Indonesia 2045 (Daulay, 2021).

METHOD

This research method used the RnD research type (Tohardi, 2019). The approach we apply in this innovation is Student-Centered Learning and a discrete approach with one language aspect in each test (Diana & Rofiki, 2020). Research and development in this innovation has been running for 5 months—December 2022 to April 2023. Product trial activities were carried out on March 16 2023 at Senior High School 1 Pelalawan involving 25 students from mathematics natural sciences and social science classes. Validation of the products that were provided on December 11 2022 at Stage University of Yogyakarta involves 3 lecturers with Doctoral and Professor degrees from Yogyakarta State University and 1 Indonesian language teacher Senior High School 1 Pelalawan. This research used 4D Design which includes definition, design, development, and dissemination (Rayanto & Sugianti, 2020). The following is the flow of media development using the 4D model:

Figure 1. Media Development Flowchart with 4D Models

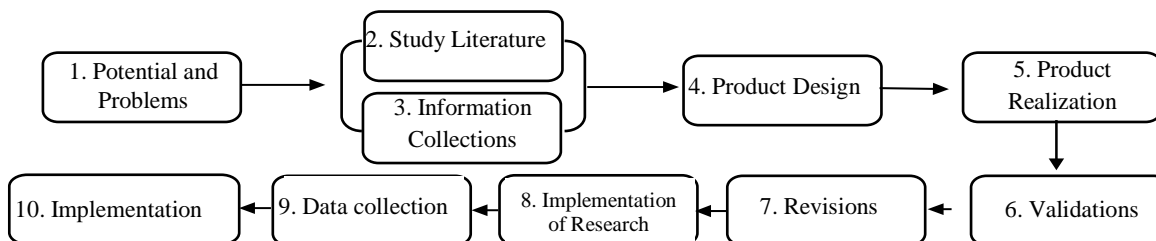The research steps follow the implementation flow as shown in Figure 2 below.

Figure 2. Research and Development Procedures with 4D Models

Activities 1 to 3 are the define stage, activities 4 to 5 are the design stage, activities 7 to 9 are the develop stage, and activity 10 is the disseminate stage (Sugiyono, 2022). The definition stage was carried out by distributing online questionnaires to various regions. The target of 100 respondents has been met with quota sampling spread across 26 different provinces. Before entering the assessment, respondents were asked to fill in the curriculum options currently being implemented at their school.

The design stage aims to design the research product. This stage begins with concept maturation, adjusting learning outcomes, exploring relevant biographical text material (Prastowo, 2015), creating customized questions, designing the cover, designing the design and contents, inputting questions on Google Form (Sahlani & Agung, 2020), adding countdown time, creating hero animations, creating biographical videos each hero (Agustien et al., 2018), converting AR to link form, and creating a QR code that combines G-Form and AR video links (Anonym, 2022).

As for the development stage, a product feasibility validation test is carried out and a review of students' perceptions of the research product is carried out. In this development, there are four validations required, namely media, language, instrument, and material validation. The experts involved in the feasibility assessment were 2 lecturers with doctoral degrees and 1 lecturer with the title of professor from the Indonesian Language and Literature Education Study Program, State University of Yogyakarta. Apart from that, 1 practitioner validator was involved, the Indonesian language teacher at Senior High School 1 Pelalawan.

At the dissemination stage, field trials are needed to see the effectiveness of the product. The subjects in our product development trials were 25 class X students, with details of 11 students of natural science and 14 students from social science. Each student is given one copy of the student's worksheet with 6 Biographical Text sub-materials along with an instruction sheet for using the students' worksheet (LKPD) integrated with AR video, QR code, and Google Form.
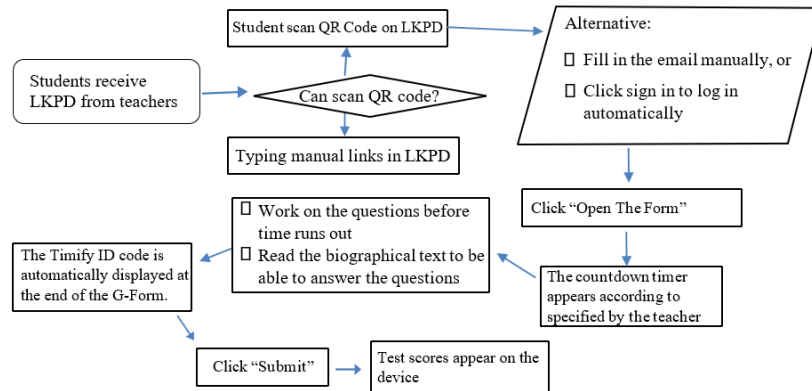

Figure 3. Flowchart of Using Student Worksheet based on G-form and Timify. me for Students

Google Form is a flexible evaluation medium and can be provided with extensions (Purba, 2020). One add-on that can be added is the Quilgo countdown timer. Quilgo's extension to Google Forms makes the form display have a countdown timer with a processing duration that can be set by the form owner. If the countdown time runs out, access to the questions will automatically be closed (Magdalena, 2020). This automatic time will trigger students to have to complete the questions or solve the problems given in the available time. On Google Forms, only question-and-answer fields are available (Mansyur et al., 2022). Meanwhile, for material to answer questions, students need to first scan Augmented Reality based on 3D animation and an interactive narrative video from one of the hero characters. The AR technology is inserted into the same QR as the G-Form link as a marker. When the device is used to work on questions, the biographical narrative can still be seen in the form of concrete text on the worksheet provided. This kind of virtual innovation is needed in learning media and direct assignments, such as worksheets. It is time for students' worksheets to no longer be done manually and conventionally, but to be given a digital touch in the process to make it more practical. That way, students will be enthusiastic about working on questions and get a realistic depiction of concepts. Teachers no longer need to correct students' answers one by one because the grades and correct answers will automatically appear after students have finished taking the test. The following are the steps for using the AR video & QR code-based Biographical Text worksheet which is integrated with Form Timer Exercises:

Figure 4. Instructions for Using Digital Students' Worksheet

Biographical text is taken from the archives of the Indonesian Ministry of Education and Culture with slight modifications and improvements in spelling. AR video and animation design designed by the team. The test questions were created independently by taking into account the Kuikulum Merdeka learning outcomes and have been validated by instrument experts. The duration of processing time is adjusted to the number of questions and level of difficulty of each test.

Table 1. The Substance of Students' Worksheet

No.	Main Topic*	Figure	The Form of Quest	Time
1.	Understanding the Meaning of Text Biography and Discuss Characteristics of Biographical Text	Rasuna Said	Group Discussions, 5 Essai Questions	45 Minutes
2.	Understand and Analyze Main Ideas and Explanatory Ideas Accurate Biography Text and Critical	Sultan Hasanuddin	10 Multiple Choice Questions	30 Minutes
3.	Analyzing Recon Texts for Finding Ideas, Thoughts, and Messages (Task 1)	Tuanku Imam Bonjol	10 Questions, True or False	30 Minutes
3.	Analyzing Recon Texts for Finding Ideas, Thoughts, and Messages (Task 2)	Buya Hamka	Copy-Paste 3 Of Parts In Structural Text	20 Minutes
4.	Examining Sign Use Read and Absorb Words in Biographical Text	Sultan Syarif Kasim II	10 Multiple Choice Questions, Error Analysis	30 Minutes
5.	Understand Internal Linguistic Aspects of Biographical Text	Ki Hadjar Dewantara	10 Multiple Choice Questions	30 Minutes
6.	Students Formative Test	Mixed	10 Multiple Choice Questions	45 Minutes
7.	Students Reflections	-	6 scale 1-5 and 2 Entries	30 Minutes

All the topics and learning objectives above are presented on digital students' worksheets separately, accompanied by biographical texts from different heroes. As an effort to introduce regional hero figures, students' worksheet 4 includes a biography of Sultan Syarif Kasim II who is a national hero from Siak, Riau. Apart from that, to avoid gender bias, Rasuna Said's biography appears in students' worksheet 1. To measure students' understanding at the end of the lesson, a summative test and student reflections are presented which are included in students' worksheet 6.

RESULTS AND DISCUSSION

Define Stage

This was done by distributing online questionnaires to various regions. The target of 100 respondents has been met with quota sampling spread across 26 different provinces. Before entering the assessment, respondents were asked to fill in the curriculum options currently being implemented at their school. The results show that 59% of the total respondents have implemented the Independent Curriculum in their schools. Next, respondents were asked to fill in several questions and the following recap results were obtained:

Table 2. Recap Data of Needs Analysis Questionnaire

No.	Questions	Number of Students who Respond					Scoring	Percentage Average
		(1)	(2)	(3)	(4)	(5)	500 Scale	
1	The Teacher gives a Students Sheet (LKPD) during the Learning	-	-	35	42	23	388	77.6%
2	Assignments given are Mostly Required to be done Manually (Written in an Assignment Book)	3	3	23	46	25	387	77.4%

| No. | Questions | Number of Students who Respond | | | | | Scoring | Percentage Average |
		(1)	(2)	(3)	(4)	(5)	500 Scale	
3	Students Feel Burdened if Unfinished Assignments Become Homework	8	19	23	35	15	330	66%
4	Students will Postpone Work on Assignments if the Submission Deadline is Still Long	4	4	40	33	19	359	71.8%
5	Students have been taught the Material Biographical Text	20	8	41	23	8	291	58.2%
6	Biographical Text Material is Considered quite Complicated	-	12	36	37	15	355	71%
7	Students need Practice Questions to better Master the Material, especially the Text Biography.	-	-	10	46	44	434	86.8%
8	Students have Devices and Use them to Play Games or Social Media	8	19	28	26	19	329	65.8%
9	Students are Interested in Using Practical Digital Technology in Completing Assignments	-	8	28	32	32	388	77.6%

From this data, it shows that students' worksheet is often used as a medium for assignments, but it is still conventional and manual. This makes the time for completing assignments directly at school ineffective and makes teachers make assignments as homework. This makes students feel burdened and tend to delay work. The Biographical Text material being taught or to be studied is estimated to be quite complex, so it is necessary to provide training with practical media, for example, combined with digital technology which is currently developing.

Design Stage

Aims to design research products. This stage begins with concept maturation, adjusting learning outcomes, exploring relevant biographical text material, creating customized questions, designing the cover, designing the design and contents, inputting questions on Google Forms, adding countdown time, creating hero animations, and creating biographical videos. Each hero converts AR to link form and creates a QR code that combines G-Form and AR Video links (Bahar, 2019).

Develop Stage

At this stage, product feasibility validation tests are carried out and students' perceptions of the research product are reviewed. In this development, there are four validations required, namely media, language, instrument, and material validation (Bachri, 2010). The experts involved in the feasibility assessment were 2 lecturers with doctoral degrees and 1 lecturer with the title of professor from the Indonesian Language and Literature Education Study Program, at Yogyakarta State University. Apart from that, 1 practitioner validator was involved, namely the Indonesian language teacher at Senior High School 1 Pelalawan. The accumulation of validation data that has been analyzed is as follows Table 3.

Table 3. Accumulated Development Validation Values

No.	Validator	As a	Final Score
1	Dr. Nurhadi, S.Pd., M.Hum.	Media Expert	95%
2	Prof. Dr. Drs. Maman Suryaman, M.Pd.	Linguistic	84%
3	Dr. Tadkiroatin Musfiroh, S.Pd., M.Hum.	Instrument Expert	87%

No.	Validator	As a	Final Score
4	Khairul, S.Pd.	Material Expert	94%
Amount			**360%**
Average			**90%**
Category			**Very Worth It**

Of the four validations obtained, a final summation and scoring are carried out to see the feasibility of the research product from all aspects. The final average result was 90%. This value is in the range of 82% < score > 100% so this research product is in the very worthy category (Purwanto, 2016).

When producing a product, field trials are needed to see the effectiveness of the product. The subjects in the trial of our development product were 25 class X students, 11 of whom were class Each student is given one copy of the student's worksheet along with an instruction sheet for use. Because it aims to analyze perceptions, testing was only carried out on students' worksheet 3 (first part) containing the biography of Tuanku Imam Bonjol. After data processing using the Likert Scale (Pranatawijaya et al., 2019), the data distribution was obtained as follows:

Table 4. Questionnaire Data on Student Perceptions of Research Products

No.	Questions	Number of Students who Respond					Percentage				
		(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
1	The Attractive Appearance of the Students' Worksheets makes me Motivated to Learn more about Biographical Texts	2	3	1	6	13	8%	12%	4%	24%	52%
2	The Description of the Material Uses Language that is Clear and Easy to Understand	-	2	1	1	21	-	8%	4%	4%	84%
3	The Writing and images Look clear and attractive	-	-	11	2	12	-	-	44%	8%	48%
4	The Learning Sequence is Clear and Systematic	-	-	3	10	12	-	-	12%	40%	48%
5.	The Instructions for Using the Students' Worksheet are easy to Understand and have a Clear Instructor.	-	1	-	6	18	-	4%	-	24%	72%
6	The Use of QR Codes is quite Interesting and is Something New at this School.	-	-	3	5	17	-	-	12%	20%	68%
7	Having a Countdown Time Motivates Me to do my Work on Time	1	6	-	5	13	4%	24%	-	20%	52%
8	The Available Countdown Time Prevents Me from Committing Fraud such as Browsing the Internet or Cheating	1	-	2	5	17	4%	-	8%	20%	48%

No.	Questions	Number of Students who Respond					Percentage				
		(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
9	Google Form Media is quite Interesting and Effective	-	-	2	5	18	-	-	8%	20%	52%
10	The Biography Text Material and Questions on the Google Form are Legible and have an Attractive Appearance.	-	-	1	4	20	-	-	4%	16%	80%
11	Students' Worksheet with a QR Code is more Effective than hand Writing Assignments or making Papers.	-	-	-	4	21	-	-	-	16%	84%
Amount		**4**	**12**	**24**	**53**	**182**	**16%**	**48%**	**96%**	**212%**	**728%**
Total Score							**1.222**				
Maximum Score							**1.375**				
Average							**89%**				

From the data analysis that was carried out on student responses after using the QR Code-based students' worksheet product, the final result was that 89% of the total respondents felt interested in the research product. Thus, the students' worksheet development product based on this innovation is categorized as very suitable for further development in education.

Discussion

The use of QR code-based students' worksheet in this study has received a positive response from students in Grade X of Senior High School 1 Pelalawan. The findings show that the majority of respondents found the learning sequence in the students' worksheet clear and systematic, and the explanations easy to understand. The integration of QR Codes, Google Form, and Timify.me as part of the learning tools contributed to an engaging and interactive learning experience for the students. Such technology-based learning resources are considered innovative and effectively bridge the gap between traditional learning methods and modern educational technology.

One notable finding is that the respondents were highly motivated to complete assignments punctually due to the countdown timer feature. This suggests that integrating digital tools that create a sense of urgency can enhance student engagement and reduce the opportunity for academic dishonesty. The effectiveness of integrating technology in assessment and learning processes demonstrates the feasibility of using similar approaches in different subjects or educational settings.

The visual elements of the students' worksheet, including text and images, received generally positive feedback; however, the lower rating from some respondents was primarily attributed to the black-and-white printing, which affected the visual appeal. This highlights the importance of visual design in educational materials, particularly when colors are intended to differentiate or emphasize certain elements.

Moreover, the use of Google Form as a medium for assignments was highly rated in terms of effectiveness and attractiveness. This indicates that students are comfortable with and receptive to online platforms as part of their learning experience. The efficiency and accessibility provided by Google Form make it a favorable choice for both students and educators, reducing the time needed for assignment collection and feedback.

The results also underscore the potential of QR codes as an innovative and interactive tool for linking learning resources. Students found QR codes to be an interesting feature that added value to

the learning material. The integration of QR codes not only facilitated easy access to additional information but also fostered students' enthusiasm for using technology in their learning journey.

Overall, the QR code-based students' worksheet was deemed highly feasible for implementation, with a 90% approval rate based on the validation process involving experts from various fields. Student responses further affirm that the developed product aligns well with learners' needs and expectations. The positive reception and effectiveness of the developed students' worksheet could serve as a reference for educational institutions in developing similar interactive and technology-integrated learning tools.

In conclusion, the QR code-based students' worksheet shows great potential for enhancing students' learning experience, providing clear instructions, effective learning sequences, and interactive features that align with current technological trends. This product serves as a promising development for promoting effective learning, and it will continue to be evaluated and refined based on the students' feedback and needs.

CONCLUSION

The innovation that we propose in the competition is developing students' worksheets that are adapted to the Kurikulum Merdeka on Biography Text material in class X. The students' worksheet is combined with digital media in the form of QR code, AR video, and form timer exercises to attract students' interest in doing assignments, make it easier for teachers to provide evaluations, and several other benefits.

This development activity goes through several stages, which are defining, designing, developing, and disseminating. Needs analysis was carried out by distributing questionnaires to 100 respondents. Product validation has been provided by four experts and practitioners with a final feasibility score of 90% or very feasible. Product trials involving 25 class X students of Senior High School Pelalawan obtained positive results with a final perception of 89%. This digital students' worksheet product with Biographical Text material has been 100% complete and the Flipbook-based product development guidelines for teachers have also been prepared and are ready to be distributed.

ACKNOWLEDGEMENT

REFERENCES

Agustien, R., Umamah, N., & Sumarno, S. (2018). Pengembangan media pembelajaran video animasi dua dimensi Situs Pekauman di Bondowoso dengan model ADDIE mata pelajaran sejarah kelas X IPS. *JEUJ: JURNAL EDUKASI*, *5*(1), 19–23. https://doi.org/10.19184/jukasi.v5i1.8010

Anonym. (2022). *Bagaimana cara menggunakan kode QR dalam pendidikan*. QR TIGER. www.qrcode-tiger.com/id/how-to-use-qr-codes-for-education-and-books

Anwar, Sukino, & Erwin. (2022). Komparasi penerapan kurikulum merdeka dan K13 di SMA Abdussalam. *Jurnal Pendidikan Dasar dan Sosial Humaniora*, *2*(1), 83–96. https://doi.org/10.53625/jpdsh.v2i1.4101

APJII. (2022a). *Profil Internet Indonesia*. CSA Consulting. https://apjii.or.id/

APJII. (2022b). *Profil internet Indonesia 2022*. APJII. https://apjii.or.id/survei2022x/download/oGxqT65tl4vbK3yin07NUWJfLcH1lh

Aprilianti, P. P., & Astuti, D. (2020). Pengembangan LKPD berbasis STEM pada Materi bangun ruang sisi datar SMP kelas VIII. *JPMI: Jurnal Pembelajaran Matematika Inovatif*, *3*(6), 691–702. https://doi.org/10.22460/jpmi.v3i6.691-702

Audie, N. (2019). Peran media pembelajaran meningkatkan hasil belajar peserta didik. *Prosiding Seminar Nasional Pendidikan FKIP UNTIRTA*, 586–595. https://jurnal.untirta.ac.id/index.php/psnp/article/view/5665/4066

Aulia, F. T., & Gumilar, S. I. (2021). *Cerdas cergas berbahasa dan bersastra Indonesia untuk SMA/SMK kelas X*. Pusat Kurikulum dan Perbukuan, Badan Penelitian dan Pengembangan dan Perbukuan, Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi. https://sman8bpp.sch.id/download/bse_ikm/kelas_x/uploads/BAHASA_INDONESIA-BS-KLS_X.pdf

Bachri, B. S. (2010). Meyakinkan validitas data melalui triangulasi pada penelitian kualitatif. *Jurnal Teknologi Pendidikan*, *10*(1), 46–62. http://ejournal.unesa.ac.id/index.php/jurnal_tp/article/view/5006

Bagaswara, Y. (2021). *Pengembangan modul berbasis QR code sebagai bahan ajar pada mata pelajaran ekonomi kelas X IPS SMA Stella Duce 2 Yogyakarta* [Sanata Dharma University]. https://repository.usd.ac.id/41603/

Bahar, H. (2019). *The application of QR codes as a teaching tool in English language teaching at vocational high school (a case study at SMK Negeri 1 Wajo)* [Universitas Hasanuddin]. https://repository.unhas.ac.id/id/eprint/3004/

Daulay, S. S. (2021). *Hubungan antara QR code dan dunia industri perdagangan*. Kemenperin. file:///D:/Apa Itu QR Code.pdf

Diana, E., & Rofiki, M. (2020). Analisis metode pembelajaran efektif di era new normal. *JRPP: Jurnal Review Pendidikan dan Pengajaran*, *3*(2), 336–342. https://doi.org/10.31004/jrpp.v3i2.1356

Febriana, R. (2021). *Evaluasi pembelajaran*. Bumi Aksara.

Harahap, N. J. (2019). Mahasiswa dan revolusi industri 4.0. *ECOBISMA (Jurnal Ekonomi, Bisnis, Dan Manajemen)*, *6*(1), 70–78. https://doi.org/10.36987/ecobi.v6i1.38

KPAI. (2020). *Survei KPAI: Guru tak interaktif selama belajar dari rumah*. KPAI. www.cnnindonesia.com/nasional/202004271602821-497716/survei-kpai-guru-tak-interaktif-selama-belajar-dari-rumah

Krismawati, N. U., Warto, W., & Suryani, N. (2018). Kebutuhan bahan ajar sejarah lokal di sma. *CENDEKIA: Jurnal Kependidikan & Kemasyarakatan*, *16*(2), 355–374. https://doi.org/10.21154/cendekia.v16i2.1331

Latifah, S., & Azrina, N. (2020). Analisis media pembelajaran berbasis e-learning di masa COVID-19 pada Guru SD/MI di Jember. *AKSELERASI: Jurnal Pendidikan Guru MI*, *1*(2), 81–93. https://doi.org/10.35719/akselerasi.v1i2.76

Magdalena, S. A. (2020). *Membuat variasi soal di Google Formulir*. Kemenristekdikti. https://ayoguruberbagi.kemdikbud.go.id/artikel/membuat-variasi-soal-di-google-formulir/

Mansyur, U., Alwi, E. I., & Akidah, I. (2022). Peningkatan keterampilan guru dalam memanfaatkan Google Form sebagai media evaluasi pembelajaran jarak jauh. *Jurnal Nuansa Akademik: Jurnal Pembangunan Masyarakat*, *7*(1), 23–34. https://doi.org/10.47200/jnajpm.v7i1.1112

Mustofa, Z. (2020). Evaluasi penyelenggaraan ujian semester berbasis komputer (USBK) menggunakan model CIPP. *Jurnal TEKNODIK*, *24*(1), 14–24. https://doi.org/10.32550/teknodik.v0i2.519

Novriani, S., Hakim, L., & Lefudin, L. (2021). Pengembangan E-LKPD mteri momentum dan impuls berbasis Android untuk meningkatkan pemahaman konsep siswa. *Phenomenon: Jurnal Pendidikan MIPA*, *11*(1), 29–44. https://doi.org/10.21580/phen.2021.11.1.7136

Pranatawijaya, V. H., Widiatry, Priskila, R., & Putra, P. B. A. A. (2019). Penerapan skala Likert dan skala Dikotomi pada kuesioner online. *Jurnal Sains dan Informatika*, *5*(2), 128–137. https://doi.org/10.34128/jsi.v5i2.185

Prastowo, A. (2015). *Panduan kreatif membuat bahan ajar inovatif: Menciptakan metode pembelajaran yg menarik dan menyenangkan*. Diva Press.

Purba, S. A. (2020). *Membuat variasi soal di Google Formulir*. Kemendikbudristek. https://ayoguruberbagi.kemdikbud.go.id/artikel/membuat-variasi-soal-di-google-formulir/

Purwanto. (2016). *Evaluasi hasil belajar*. Pustaka Belajar.

Rahayu, I. K., Subyantoro, & Pristiwati, R. (2022). Biografi sastrawan lokal dalam pembelajaran teks biografi untuk peserta didik SMA. *Jurnal Sinestesia*, *12*(2), 739–746. https://www.sinestesia.pustaka.my.id/journal/article/view/236

Rayanto, Y. H., & Sugianti. (2020). *Penelitian dan pengembangan model ADDIE & R2D2*. Lembaga Academic & Research Institute.

Rizka, O. S. (2022). *Pengembangan media flashcards berbasis QR code pada mata pelajaran bahasa Inggris materi parts of body kelas V* [UIN Raden Intan Lampung]. http://repository.radenintan.ac.id/16942/

Rohana, S., & Syahputra, A. (2021). Model Pembelajaan blended learning pasca new normal COVID-19. *AT-TA'DIB: Jurnal Ilmiah Prodi Pendidikan Agama Islam*, *13*(1), 48–59. https://doi.org/10.47498/tadib.v13i01.488

Sahlani, L., & Agung, B. (2020). Asesmen pembelajaran berbasis G-Form pada mata pelajaran sejarah kebudayaan islam di MAN 2 Bandung. *Al-Ibanah: Jurnal Keislaman, Kemasyarakatan, dan Pendidikan*, *5*(1), 1–27. https://journal.iaipibandung.ac.id/index.php/ibanah/article/view/20

Sapitri, M., & Nugroho, A. (2022). Model bahan ajar menulis teks biografi pada siswa Kelas X MA Riyadhus Sholihin. *Linggau Jurnal Language Education and Literature*, *2*(3), 23–36. https://doi.org/10.55526/ljlel.v2i3.365

Septiyawan, A. (2021). *Pengembangan media berbasis aplikasi QR Code dalam pembelajaran materi surat pribadi dan resmi Kelas VII SMP Negeri 3 Gamping tahun ajaran 2021/2022* [Universitas PGRI Yogyakarta]. https://repository.upy.ac.id/3410/

Sugiyono. (2022). *Metode penelitian dan pengembangan*. Alfabeta.

Tafonao, T. (2018). Peranan media pembelajaran dalam meningkatkan minat belajar mahasiswa. *Komunikasi Pendidikan*, *2*(2), 103–114. https://doi.org/10.32585/jkp.v2i2.113

Tohardi, A. (2019). *Pengantar metodologi penelitian sosial + Plus*. Tanjungpura University Press.