



THE DEVELOPMENT OF LIVEWORKSHEETS AS INTERACTIVE INSTRUCTIONAL MEDIA FOR TEACHING ANALYTICAL EXPOSITION TEXTS IN SENIOR HIGH SCHOOLS

Angelina Christine Simanjuntak,¹ Indah Tri Purwanti²

^{1,2} English Study Program, Faculty of Teachers Training and Education
Universitas Riau, Indonesia

Corresponding author: angelina.christine2703@student.unri.ac.id

Article Info

Received: June 19, 2025
Revised: September 15, 2025
Accepted: October 9, 2025
Published: October 31, 2025

Abstract

This research aimed to develop and validate Liveworksheets as interactive instructional media to support the teaching of reading analytical exposition texts in senior high school. The study was motivated by the limited use of interactive media in English reading and students' difficulties in understanding exposition texts, particularly due to the lack of engaging materials. This study used the Research and Development (R&D) method and adopted the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model and focused on analysis, Design, and Development for the instructional media. This research involved needs analysis through structured interviews and questionnaires with teachers and students, as well as curriculum analysis based on the Merdeka Curriculum. The product was designed using Canva and implemented in the Liveworksheets platform, incorporating multimedia elements like video, pictures, and interactive exercises. The media was validated by a media expert, material expert, and pedagogic expert. The result showed that the developed Liveworksheets were categorized as "very valid" with an average score above 3.25 based on validity criteria. This shows that Liveworksheets are effective and feasible for use as interactive instructional media in teaching analytical exposition texts. This study concludes that Liveworksheets can enhance students' engagement and improve learning outcomes in reading comprehension

Keywords:

Liveworksheets,
interactive instructional
media, exposition text.

To cite this article: Simanjuntak, A. C., & Purwati, I. T. (2025). The development of Liveworksheets as interactive instruction media for teaching analytical exposition texts in senior high schools. International Journal of Educational Best Practices, 9(2), 29–41. <https://doi.org/10.32851/ijebp.v9n2.p29-41>

INTRODUCTION

Technology integration into education has become increasingly essential to support student engagement and improve learning outcomes. In English language teaching, reading remains a critical skill, yet many senior high school students struggle with comprehension, especially when dealing with complex texts such as analytical exposition. These difficulties are often linked to limited vocabulary, low motivation, and non-interactive teaching methods (Isik, 2022; Celik, 2019). To address these difficulties, instructional media must evolve. Interactive instructional media are defined as tools that allow two-way communication and active student involvement and have shown promising results in enhancing learning (Sahronih et al., 2019; Aisyah & Haryudin, 2020).

One of the media is Liveworksheets, a web-based platform that transforms conventional worksheets into interactive, auto-corrected exercises. It supports features such as drag-and-drop, fill-in-the-blank, and multimedia integration, engaging experiences for students (Yusuf & Ali, 2022; Sulistiani et al., 2023). Research by Anggrahini and Rusmini (2022) demonstrated that electronic student worksheets supported by Liveworksheets improved students' science process skills and collaboration. Similarly, Ghaisani and Setyasto (2023) found that Liveworksheets significantly enhanced learning outcomes and motivation. These studies underline the platform's potential as an effective instructional tool.

Despite the growing body of research, there is still a lack of studies focused on the development and validation of Liveworksheets specifically for teaching reading comprehension of analytical exposition texts in the context of the Indonesian Merdeka Curriculum. This curriculum emphasizes student-centered learning, digital literacy, and critical thinking skills (Latifa et al., 2023).

This study aims to develop Liveworksheets as interactive instructional media to support the teaching of analytical exposition texts in senior high schools. This study used the Research and Development (R&D) method with the ADDIE model and focused on analyzing student needs, designing content, and developing a validated instructional product. The goal is to provide a practical and engaging media solution that aligns with curriculum objectives and addresses student challenges in reading comprehension.

METHODS

Research Design

This research used the Research and Development (R&D) methodology to design, develop, and validate Liveworksheets as interactive instructional media for teaching analytical exposition text for tenth-grade students. This research adopted the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) from systematic framework for instructional design (Sugiyono, 2016). However, this research only focused on the third stages, which included analysis, design, and development. This research in line with the research conducted by Yulia et al. (2023) stated that the selection of analysis, design, and development was based on establishing the validity of interactive instructional media before its implementation in the field. These three stages encompass the processes of analyzing learning needs, designing the product, and developing it with validation from subject matter experts, instructional design experts, and media experts. The implementation and evaluation stages were not conducted, as this study is limited to product development and validation, rather than



the direct application of the product in a learning environment or assessing its impact on learning outcomes. Therefore, using the first three stages of ADDIE is considered sufficient to produce a product ready for further testing in the next phase of the research. Figure 1 shows the ADDIE model without the implementation and evaluation stage.

Figure 1

Analysis, Design, Development Stage



Setting and Participants

This study conducted need analysis to explore the challenges and media use in teaching analytical exposition texts, interviews were conducted with two English teachers (one male, one female) from different senior high schools in Pekanbaru. Teacher 1 holds a bachelor's degree in English Education with 19 years of experience, while Teacher 2 has the same degree with 10 years of experience. Each interview lasted 10–15 minutes using six semi-structured questions. Additionally, to understand students' learning preferences and views on interactive media, a questionnaire was distributed via Google Form to 10th-grade students in Pekanbaru, yielding 42 respondents.

Data Collection Method(s) and Analysis

This research utilized multiple data collection methods to ensure a thorough understanding of instructional requirements and the effectiveness of the media. Initially, a needs analysis was conducted through teacher interviews and student questionnaires to identify challenges in learning descriptive texts and preferences for instructional media. This process offered valuable insights into current teaching strategies, student learning difficulties, and the role of technology in enhancing engagement and comprehension.

Next, validation sheets were distributed to three experts specializing in materials, media, and pedagogy. The feedback obtained from these validators served as key data for addressing the research questions. The assessment covered various aspects of the Liveworksheets-based media, including content accuracy, interactive components, design quality, and pedagogical alignment. This validation ensured that the press adhered to educational standards and effectively addressed the needs of both students and teachers. The scores showed to evaluate the validity of the Liveworksheets media, applying validity criteria adopted by Sugiyono (2016) as below:

Table 2

Validity Criteria

No.	Achievement Percentage	Validity Category
1.	$3.25 \leq x \leq 4$	Very Valid
2.	$2.5 \leq x \leq 3.25$	Valid
3.	$1.75 \leq x \leq 2.5$	Less Valid
4.	$1 \leq x \leq 1.75$	Invalid



FINDINGS

Analysis Stage

In analysis stage, researcher identified the problems in teaching analytical exposition text by conducted structured interview with English teachers and distributed questionnaires for students. According to Rashidi et al. (2014), structured interview is the activity explained about factual information possessed by the respondents. This interview consists of some questions related to the teaching challenges in analytical exposition texts, the used of learning media in teaching, teachers' perception of interactive instructional media and technology learning. The results of the interview can be seen in the following transcriptions:

a. Teacher's challenges in teaching analytical exposition text

R: What are the challenges teachers face when teaching exposition text in grade X?

T1: *"One of the challenges in teaching reading analytical exposition text that I experienced it seem like the students didn't get enough basic English before such as vocabularies..."*

T2: *"The difficulties I found when teaching analytical exposition text is vocabularies, because many of my students not suitable with any new vocabularies for learning and they didn't understand well what they read from the text ..."*

b. Learning media used in teaching analytical exposition text

R: What media do teachers usually use to teach exposition texts, and how effective are these media?

T1: *"... usually, I use media like PowerPoint slides to show up the analytical exposition text or smartphone. I think it helps a lot because the students always hold their smartphone to share the PPT slides or the assignment using Kahoot ..."*

T2: *"... I usually use the projector to show learning videos. I think videos can increase students' motivation in learning analytical exposition text. I found the videos from YouTube and we watched it in the classroom, after that I ask them to do activity from Quizizz, so they need to use their phone or laptop."*

c. Teachers' perception of interactive instructional media

R: As a teacher, what features are needed in interactive instructional media for students' need, and what are your expectations for more interactive instructional media in the teaching process?

T1: *"... as a teacher, I should understand the need of students for learning analytical exposition text, I should choose the right media so my students could run more effective evaluation and assessment ..."*

T2: *"... first, as a teacher I should know the types of my students and understand them well. As I know, my students are able to use smartphones or laptop, so they can read or watch video about learning material by their smartphone to increase their understanding and as their teacher, I should facilitate them a right media or sites to access in learning time ..."*

d. Teachers' perception of technology learning and the idea of the use of Liveworksheets in teaching analytical exposition text

R: What do teachers think about using Liveworksheets as instructional media for exposition texts in grade X? Do teachers prefer technology learning for teaching



T1: "... **the use of technology helps me a lot in the learning process, technology gives me more motivation to increase my ability especially for teaching with media ...**

T1: "... **I think it's good websites, but I haven't tried it before. I think I will try it soon since it's flexible and not waste many time ...**"

T2: "... **I think liveworksheet can be a good media for teaching because I have known little bit about it but haven't tried, I will try to use it later ...**"

From the interviews, it was found that the main problem teachers found in teaching reading analytical exposition texts, students have difficulties understanding the text because of the lack of vocabulary. However, teachers have used some interactive learning media that utilize technology such as PowerPoint, Kahoot, and Quizizz, but these media were not effective enough because of teachers' difficulties in controlling students in submitting analytical exposition text assignments with the regulation. Based on the results of the interview, Liveworksheets media can be an alternative for use in the teaching process.

However, the results of questionnaires for tenth-grade students can be seen in the following tables:

a. Students learning experience in analytical exposition text material

Table 3

Students learning experience in analytical exposition text material

Questions	Indicator	(%)
Do you find any difficulties in understanding analytical exposition text?	Yes	77.3%
	No	22.7%
What difficulties do you face in learning analytical exposition text? (you can choose more than one option)	Understanding the meaning of new or unfamiliar words	68.2%
	Identifying the introductory statement of the text	50%
	Recognizing the structure of the text	31.8%
	Understanding the descriptions of objects, places, or people	45.5%

Based on Table 3, most students struggle with analytical exposition texts, particularly in understanding unfamiliar vocabulary (68.2%), identifying introductory paragraphs (50%), interpreting descriptions (45.5%), and recognizing text structure (31.8%). These results indicate a significant need for supportive teaching media to help students overcome these challenges.

b. Learning media used in teaching analytical exposition text



Table 4*Learning media used in teaching analytical exposition text*

Questions	Indicators	(%)
What kind of media do teacher usually use to teach analytical exposition text? (you can choose more than one option)	Printed textbooks	68.2%
	PowerPoint presentation	81.8%
	Educational websites or blogs	22.7%
	Others: (Group discussions, collaboration)	18.2%

Table 4 highlights that while textbooks (68.2%) and PowerPoint presentations (81.8%) help students understand analytical exposition text. Liveworksheets offer a promising alternative to further enhance students' comprehension.

c. Students' preference of technology in learning

Table 5*Students' preference of technology in learning*

Questions	Indicators	(%)
Does learning media that is currently used by teacher help you to understand analytical exposition text?	Yes	54.5%
	No	45.5%
Do you prefer to learn using technology such as computers, tablets or smartphones rather than textbooks?	Yes	95.5%
	No	4.5%
What do you think are the main benefits of using technology in learning analytical exposition text? (you can choose more than one)	Makes learning more flexible	81.8%
	Easier access to reading materials and examples	63.6%
	Engaging and motivating learning environment	63.6%
	Support visual learning by providing clear examples	63.6%

Table 5 shows that 95.5% of students prefer learning with technology, mainly because it offers flexibility (81.8%), easier access to materials (63.6%), engaging learning experiences (63.6%), and visual support (63.6%). These factors support the development of Liveworksheets as interactive media, making learning more interesting and effective for tech-savvy students.



d. Interactive Instructional Media (Liveworksheets) used in teaching analytical exposition text

Table 6

Interactive Instructional Media (Liveworksheets) used in teaching analytical exposition text

Questions	Indicators	(%)
Have you ever used interactive media in learning? (you can choose more than one)	Quizizz	86.4%
	Quizlet	18.2%
	Liveworksheets	0%
	Kahoot	77.3%
	Others: (Youtube, Google)	4.5%
Do you find it interesting to used features such as pictures, videos, and audio in interactive media?	Yes	86.4%
	No	13.6%
Liveworksheets is an interactive media contains online exercises, automatic grading, with some of interesting texts and videos inside for helping the teaching and learning process.	Yes	100%
If your teacher gives you Liveworksheets for learning activity in the classroom, would you like to use it to increase your knowledge?	No	0%

Table 6 indicates that students commonly used technology-based media such as Quizizz (86.4%), Kahoot (77.3%), Quizlet (18.2%), and Liveworksheets (18.2%), with 86.4% showing interest in learning through pictures, videos, and audio. This result highlights the importance of technology in learning and students' preference for multimedia content in studying analytical exposition texts. However, many students are unfamiliar with Liveworksheets, as it has not been used by the teacher. Therefore, integrating images, audio, and video into Liveworksheets can offer a new and engaging way to improve students' understanding of analytical exposition texts.

In addition, all of the data of the tables became the main reason to develop Liveworksheets as interactive instructional media. It is interesting for students to learn the material if the media is supported. Students' understanding of technology also encourages the development of Liveworksheets to improve the learning process.

Design Stage

In this stage, the researcher designed the Liveworksheets media. The Liveworksheet consists of analytical exposition text material, competency achievement, learning objectives, animated video, and exercises with texts to be completed by students. All the elements of the worksheets were designed using the Canva application. Canva is a web-based graphic design tool that enables users to craft custom designs from the ground up or leverage existing templates (Pedroso et al., 2023).



Development Stage

After designed all elements of the worksheets, the worksheets were transferred to the Liveworksheets website to add interactive command features until the product reached for validation. The validation aimed to assess the suitability of the media developed. The validation consists of three experts which were media expert, material expert, and pedagogic expert. In addition, the pages of Liveworksheets developed are illustrated in Figure 3.1 through 3.7.

a. Cover

The first part of the worksheet displays a cover in the form of material titles in the upper center. While at the bottom left there is the level of this worksheet aimed at 10th grade, at the bottom right there is a box where students fill in their identity. The cover is designed as attractive as possible to attract students' attention. Moreover, the interesting colors and images are expected to attract students' interest in reading the worksheets. The cover can be seen in Figure 1.

b. Competency achievement and Learning objectives

This worksheet provides the learning objectives that students understand the purpose of the Liveworksheet well after reading and working on it. The learning objectives and the learning outcomes are taken from the syllabus and can be seen in the Figure 2 and 3.

c. Content

The worksheet provides the analytical exposition text material that will be discussed. The materials are supported with images, texts, and video to be read and watch by students. Students are also learned to read the material while watching the learning video. The intonation of the video is also adjusted so that students can understand the information well. Moreover, the example of analytical exposition text in the Liveworksheet is complete with discussion. The materials can be seen in Figure 4, Figure 5, and Figure 6. In the content section, exercises are the main point of the Liveworksheet. In this worksheet, there are two kinds of exercises that can increase students' reading comprehension. Exercises can be seen in the Figure 7 below.

Figure 1

Cover

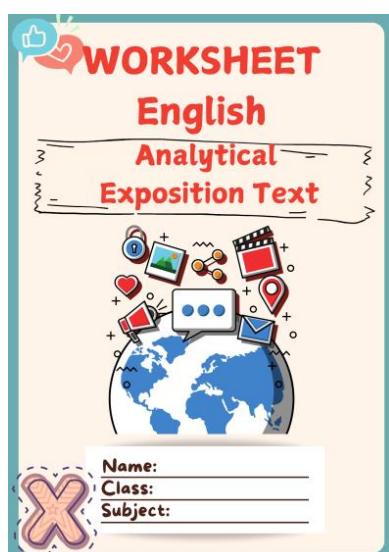


Figure 2

Competency Achievement

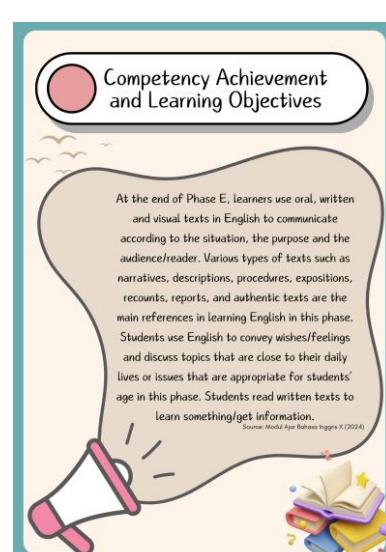


Figure 3

Learning Objectives

Competency Achievement and Learning Objectives

Based on the given factual analytical exposition text, students are able (will be able) to:

- Identify the reading comprehension (main idea/ specific information, detailed information, reference, inference, vocabulary) properly.
- Identify the social function of analytical exposition text correctly.
- Identify the generic structures of analytical exposition text correctly.
- Analyze the language features (simple present tense, modal verbs, general nouns, abstract nouns) of analytical exposition text correctly.
- Identify information from the text that has been provided and choose multiple choice answers that match the information in the text.

Adapted: Modul Ajar Bahasa Inggris X (2014)



Figure 4

Material of Exposition Text

Figure 5

Animated Video



Figure 6

Example of Text

Present Tense However, the benefits of social media are joined with notable risks. The extends use of social media has shown to General nouns contribute to mental health issues in youth, such as anxiety Abstract nouns and depression. Data reveals that in Indonesia, about 27% nouns of adolescents experience clinical symptoms of depression. Modal reportedly correlated with excessive social media use. The verb constant exposure to idealized lives portrayed online can lead to negative self-image and feelings of inadequacy among young users, worsen mental health problems.

Present Tense Moreover, social media can become a breeding ground for General nouns misinformation and cyberbullying. Indonesian youth are Abstract nouns particularly vulnerable to the spread of false information, which can influence their beliefs and behaviors. Abstract nouns During the COVID-19 pandemic, for instance, several misleading health claims circulated widely on social Media platforms, causing confusion and hesitation regarding verb vaccinations among young individuals. At the same time, incidents of cyberbullying have escalated, with over 40% of Indonesian youth reporting experiences of online harassment, which hampers their overall well-being and safety.

Figure 7

Exercises

Exercise 1

Read and answer carefully!



I. Multiple-Choice Questions

1. The text mainly discuss about ...

- a) The usage of gadgets in Indonesian education.
- b) The usage of technology in Indonesian education.
- c) The learning transformation in Indonesian education.
- d) The usage of e-books in Indonesian education.

2. The word "Educators" in paragraph 4 refers to ...

- a) Governments
- b) Parents
- c) Teachers
- d) Students

3. What is the synonym of "opportunity"?

- a) Ability
- b) Deal
- c) Attempt
- d) Advantage

4. "Educators must find a balance between leveraging the advantages of technology..." What is the language feature of this sentence?

- a) Modal verb
- b) Past tense
- c) Noun
- d) Future tense



Experts Validation Results

Three validators evaluated the Liveworksheets according to their respective areas as part of the validation process. After analysis, the validation results were divided into four categories: Very valid (4), Valid (3), Less valid (2), and Invalid (1). The validation findings are summarized in Table 7.

Table 7

Validation Aspect Results

Validation Aspect	Criteria Assessed	Average Score	Final Score
Media Validation	The Benefits of Media	3.6	3.7
	The Media Design	3.5	
	The Operation of Media	3.7	
Material Validation	Suitability with Curriculum	3.6	3.7
	Comprehensiveness	3.6	
	Compatibility with Current Technology	4	
Pedagogic Validation	Legibility	3.7	3.6
	Content Quality	3.25	
	Pedagogical Design	3.5	
Overall Effectiveness	Usability and Technical Quality	3.7	3.6
	Overall Effectiveness	4	

The results indicate that the developed Liveworksheets scored are very valid in all aspects, with average total score 3.6, categorizing the instructional media is suitable and valid to use in the classroom for increasing teaching and learning analytical exposition texts.

DISCUSSION

Based on teachers' interviews, the need analysis results showed that the English teachers have difficulties in teaching analytical exposition text because of the lack of students' basic vocabulary. The use of learning media that is commonly used by teachers is not effective enough, so teachers need interactive instructional media based on Liveworksheets to increase student interest in learning analytical exposition texts. Furthermore, the utilization of technology in learning using Liveworksheets is expected to help improve teachers' abilities in using technology and enhance student motivation in the learning process.

However, the students' questionnaire results showed that the majority of tenth-grade students have difficulties in knowing unfamiliar words or vocabularies in analytical exposition text. This makes students prefer to learn using technology, because technology helps learning process more flexible and Liveworksheets is one of interactive instructional media-based technology that can be used by students to increase knowledge especially analytical exposition text material.

Media validation assessed three aspects such as the benefits of media, the media design, and the operation of media. The benefits of media make learning process easier and effective for understanding and increasing learning. The media design includes the size, color, font type, and all the display quality of the media. The operation of media includes the clarity of the use



of all elements of the media. Based on the aspects, validation result by media expert was in the average score of 3.7. The aspect aligns with a research from Azahra and Fitrihidajati (2023) stated that the media aspects review the value of a worksheet product developed and suitable for use with the very valid category.

Material validation assessed four aspects, first is, suitability with curriculum which indicates the materials are aligned with the learning objectives, suitable for students' requirements and the elements related to the material; second, comprehensiveness that indicates instructional media help students comprehend the materials, the exercises and language is clear; third, compatibility with current technology indicates interactive instructional media has following current technology; fourth, legibility indicates language used, freely navigation for students, allows independent learning, and the media gives immediate feedback after answering the questions. The aspects showed the result of suitability of the material in the live worksheet and the material presented with the learning objectives with the average score of material expert validation is 3.7, a "very valid" level of validity criteria. This result is supported with the research by Azahra and Fitrihidajati (2023) which stated that the material aspects' result indicates that activities in the worksheet are valid and suitable to the learning objectives based on the established achievements of the Merdeka Curriculum.

In addition, the pedagogic validation assessed four aspects, the first is, the content quality includes the clear and suitable texts for tenth-grade students, the descriptions align with the core concepts, the content align with curriculum standards for tenth grade, appropriate of the vocabulary level. Second, pedagogical design, includes the clear and achievable learning objectives, interactive features, and support elements. The pedagogic expert validation score is 3.6 with a "very valid" level of validity criteria. The result of the pedagogic validation is similar to research by Sari et al., (2021) showed the score of more than 3.6 in the research indicating that the worksheet was reliable and valid according to the validation criteria.

The results of this study indicate that integrating Liveworksheets as interactive instructional media effectively addresses the primary challenges in teaching analytical exposition texts to Grade X students. According to Sugiyono (2016), interactive instructional media is valid if the percentage of validity shows a result of more than 3.25. Based on the statement, it can be understood that the Liveworksheets media received a "very valid" level of validity criteria by the three experts, with comments and suggestions provided on the validation sheets.

Through this research, it can be seen that live worksheet media is beneficial in achieving learning objectives and suitable for use in the learning process, as the research conducted by Ghaisani and Setyasto (2023) stated that electronic worksheets are effective for improving students' learning outcomes. Moreover, the results of this research are also in line with research by Firtsanianta and Khofifah (2022) stated that the Electronic Student Worksheet based on the Liveworksheet application is declared to meet the eligibility criteria and be used as an alternative instructional media in teaching activity. This product has advantages compared to conventional worksheets as it is more efficient because it does not require paper, and more effective because it can include various types of exercises such as multiple choice, essays, as well as educational videos, making students not feel bored during learning and attracting their interest to study further the material that has been taught. Liveworksheets can be accessed in link format and do not have a specific time limit for access; it only requires an internet connection.



CONCLUSIONS

This research aimed to develop and validate the Liveworksheets as an interactive learning tool for teaching analytical exposition texts to Grade X students. The study adhered to the Analysis, Design, and Development stage to create a technology-enhanced instructional media. This integrated multimedia elements, such as interactive activities and real-time feedback, to enhance student engagement and comprehension.

Expert validation in the areas of media, materials, and pedagogy confirmed that the Liveworksheets tool is very valid and suitable for classroom use. The results indicated that Liveworksheets addressed challenges associated with traditional teaching methods, which often struggle to maintain student engagement. Additionally, the platform supports sustainable education by reducing reliance on printed materials. The results affirm that this digital learning tool is practical, engaging, and aligned with modern curriculum standard.

Acknowledgment

The researcher would like to express sincere gratitude to all those who contributed to the completion of this study. Thank you to the expert validators for their constructive feedback and suggestions, which significantly improved the quality of the developed instructional media.

Authorship Contribution Statement:

All authors made significant contributions to the conception and design of the study, data acquisition, analysis, and interpretation. Angelina Christine Simanjuntak and Indah Tri Purwanti drafted the manuscript, and all authors critically revised it for important intellectual content. All authors approved the final manuscript and take responsibility for the integrity of the work.

REFERENCES

Aisyah, S., & Haryudin, A. (2020). Instructional Media Used in Teaching English. *PROJECT (Professional Journal of English Education)*, 3(6), 737. <https://doi.org/10.22460/project.v3i6.p737-742>

Anggraeni, A., & Rusmini, R. (2022). Improving Science Process Skills and Collaboration on the Lesson Reaction Rate Using Electronic Student Worksheet Assisted with Liveworksheets Website. *Journal of The Indonesian Society of Integrated Chemistry*, 14(1), 28–43. <https://doi.org/10.22437/jsic.v14i1.17859>

Azahra, N & Fitrihidajati, H. (2023). *Development of Student E-worksheet Based on Guided Inquiry of Environmental Change Material to Train Science Process Skills for 10th Grade High School*. Berkala Ilmiah Pendidikan Biologi, 12(3), 744–753. <https://doi.org/10.26740/bioedu.v12n3.p743-752>

Celik, B. (2019). Developing Writing Skills Through Reading. *International Journal of Social Sciences & Educational Studies*, 6(1), 206–214. <https://doi.org/10.23918/ijsses.v6i1p206>

Firtsanianta, H., & Khofifah, I. (2022). Efektivitas E-LKPD Berbantuan Liveworksheets Untuk Meningkatkan Hasil Belajar Peserta Didik. *Conference of Elementary Studies*, 140–147. <https://journal.um.surabaya.ac.id/Pro/article/view/14918>

Ghaisani, N. R. T., & Setyasto, N. (2023). Development of Liveworksheets-Based Electronic Student Worksheets (E-LKPD) to Improve Science Learning Outcomes.



Jurnal Penelitian Pendidikan IPA, 9(8), 6147–6156.
<https://doi.org/10.29303/jppipa.v9i8.4571>

Isik, A. D. (2022). Reading environment and fluent reading skills. *Pedagogical Research*, 8(1), em0148. <https://doi.org/10.29333/pr/12723>

Latifa, H., Ratih, K., & Maryadi, M. (2023). Implementing the Merdeka Curriculum in English Language Teaching: A Study of Teacher Learning Steps. *VELES (Voices of English Language Education Society)*, 7(3), 640–651. <https://doi.org/10.29408/veles.v7i3.24049>

Pedroso, J. E., RV S. Sulleza, Keith Hae Moon C. Francisco, Ayya Jade O. Noman, & Chynna Althea V. Martinez. (2023). Unlocking the Power of Canva: Students' Views on Using the All-In-One Tool for Creativity and Collaboration. *Journal of Digital Learning and Distance Education*, 2(2), 443–461. <https://doi.org/10.56778/jdlde.v2i2.117>

Rashidi, M. N., Ara Begum, R., Mokhtar, M., & Pereira, J. J. (2014). The Conduct of Structured Interviews as Research Implementation Method. *Journal of Advanced Research Design*, 1(1), 28–34. <https://www.akademiabaru.com/submit/index.php/ard/article/view/4779>

Sahronih, S., Purwanto, A., & Sumantri, M. S. (2019). The effect of interactive learning media on students' science learning outcomes. *ACM International Conference Proceeding Series, Part F1483*(July 2020), 20–24. <https://doi.org/10.1145/3323771.3323797>

Sari, E. N. F. T., Amin, M., Hudha, A. M., Fatmawati, D., & Fauzi, A. (2021). Development of HOTS-based biology learning documents using ADDIE Model. *Research and Development in Education*, 1(2), 61–70. <https://doi.org/10.22219/raden.v1i2.19049>

Sugiyono, (2016). *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D. Alfabeta*.

Sulistiani, D. R., Khusnandi, F. S., Fatkhurrohman, A., & Wahyono, W. (2023). The Effectiveness of Using Liveworksheets as Learning Evaluation Materials for Elementary School Students. *Social, Humanities, and Educational Studies (SHES): Conference Series*, 6(1), 258. <https://doi.org/10.20961/shes.v6i1.71099>

Yulia, E., Riadi, S., & Nursanni, B. (2023). Validity of Interactive Multimedia on Metal Coating Learning Developed Using the ADDIE Model. *Jurnal Penelitian Pendidikan IPA*, 9(5), 3968–3974. <https://doi.org/10.29303/jppipa.v9i5.3772>

Yusuf, F., & Ali, A. (2022). Exploring Students' Perception on using Live worksheet as Self-directed Learning of Listening Skills in Online Education. *Utamax: Journal of Ultimate Research and Trends in Education*, 4(3), 255–266. <https://doi.org/10.31849/utamax.v4i3.11449>

