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Revolutionizing Learning: Unveiling the Influence of Liveworksheets Embedded within Contextual Teaching

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ABSTRACT
This study explores developing and implementing integrated teaching materials using Liveworksheets and a contextual approach to enhance learning processes in fourth-grade classrooms. Acknowledging the growing influence of technology in education, this research underscores the necessity for practical teaching resources that can enhance student engagement and comprehension. Employing the ADDIE model for its systematic development process, the study conducted a comprehensive analysis, design, development, implementation, and evaluation of the materials. Validation by expert reviewers in language, content, and design affirmed the materials' high validity, with scores between 94% and 95%. Practicality assessments involving 18 fourth-grade students and their teacher demonstrated the materials' effectiveness, achieving an efficient rating with an average score of 94.16%. The findings suggest that Liveworksheets-assisted teaching materials, enriched with a contextual approach, significantly contribute to a more interactive and understanding-focused learning environment. This study highlights the potential of digital tools in enhancing the educational experience, offering a valuable resource for educators seeking to incorporate technology into their teaching strategies.

INTRODUCTION

The rapid integration of technology into educational frameworks has ushered in significant shifts in teaching and learning dynamics (Rahmah et al., 2023). While the broad impacts of digital tools on enhancing student engagement and facilitating access to diverse content are well-documented, there is a pressing need to delve deeper into how these tools can be specifically tailored to improve the educational process. Building on the foundational work by Ramdani et al. (2021), which highlighted the evolving role of teaching materials in a digital age, and inspired by Budiman et al. (2021), who advocated for a contextual approach to education, this study seeks to transcend the traditional application of digital tools in classrooms.

Previous research has extensively explored the integration and practical implications of technologies like Liveworksheets in educational settings, highlighting their utility in fostering interactive learning environments (Bārdule, 2021; Wiono, 2023). However, these studies often focus on the superficial application of such technologies without examining their potential to fundamentally transform the learning process by integrating real-life contexts that enhance relevance and engagement for students.

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This research uniquely contributes to the field by examining the effects of Liveworksheets-assisted teaching materials that are digital and enriched with a contextual learning approach, focusing on fourth-grade students. The hypothesis posits that this approach will significantly enhance engagement and learning outcomes by bridging the gap between theoretical knowledge and practical application, thus rendering education more relatable and effective.

Driven by the growing need for educational materials that convey content while fostering scientific literacy and problem-solving skills (Vinca Rosea Cristy & Ditawati Nur Pamenang, 2023; Yusro et al., 2023), this study proposes an innovative blend of digital tools with context-based learning strategies. This combination is expected to provide new insights into how educational technology can be optimized for a more transformative educational experience.

Therefore, this research aims to assess the impact of integrating Liveworksheets with a contextual learning approach on student engagement and learning outcomes, exploring how digital tools can be more effectively aligned with students' daily experiences and educational needs. By addressing these objectives, the study aims to offer a novel perspective on using digital technologies in education, proposing a model that could serve as a benchmark for future educational innovations.

METHODS

This study adopted the ADDIE Development Research Model, focusing on the iterative processes of Analysis, Design, Development, Implementation, and Evaluation to investigate the integration of Liveworksheets in fourth-grade education (Branch, 2009). The research was conducted in Class IV A at SDN 41 Batuputih, involving 18 students. The selection of this class was informed by discussions with the teaching staff, who highlighted a specific need for innovative teaching materials to enhance learning outcomes and student engagement, as well as the suitability of the class based on the current educational requirements and the potential benefits of Liveworksheets-assisted materials.

Data Collection Methods

The data collection methodology employed in this study adhered to a rigorous mixed-methods approach, seamlessly integrating qualitative and quantitative methodologies to ensure a comprehensive exploration of the research problem. Observations constituted a fundamental component of the data-gathering process, allowing researchers to immerse themselves within the classroom environment. By directly observing interactions between students and Liveworksheets-assisted teaching materials, researchers could discern nuanced dynamics about engagement levels and the efficacy of the learning process.

Complementing the observational aspect, interviews were conducted with the class teacher and other pertinent educational staff members. These interviews served as invaluable qualitative data sources, offering insights into diverse facets of the educational landscape. Key areas of inquiry included elucidating students' specific learning needs, gauging perceptions regarding the effectiveness of Liveworksheets, and discerning any discernible shifts in student engagement and comprehension over time.

Questionnaires were administered to students and teachers to supplement the qualitative insights from observations and interviews. These questionnaires were meticulously designed to elicit quantifiable data regarding participants' perceptions and experiences. The questionnaire evaluated students' responses towards Liveworksheets-assisted teaching materials, emphasising usability, engagement, and learning efficacy. Conversely, the teacher questionnaire sought to assess the practicality of the materials from an instructional standpoint, evaluating aspects such as ease of preparation, implementation, and perceived impact on student learning outcomes.

Validation and Practicality Testing

The materials developed through the ADDIE model were subjected to a rigorous validation process involving a panel of experts who assessed the materials based on a set of predefined criteria using a Likert scale (Joshi et al., 2015):

Score 1 (Invalid): The material is unusable.
Score 2 (Less Valid): The material can be used with significant revisions.

Score 3 (Fairly Valid): The material can be used with slight revisions.
Score 4 (Valid): The material is valid without revisions.

The validity of the materials was calculated using the formula:

$$\text{Validity Percentage} = \frac{\sum scor\ per\ item}{Maximum\ score} \times 100\%$$

Following the validation, practicality testing was conducted to evaluate the materials' ease of use and effectiveness in a classroom setting. This stage used a similar scoring mechanism to assess practicality, with categories ranging from "Not Practical" to "Very Practical," based on the accumulated scores from both students and teachers.

$$\text{Practicality Percentage} = \frac{\sum scor\ per\ item}{Maximum\ score} \times 100\%$$

The combined use of these methods provided a robust framework for assessing the impact of Liveworksheets-assisted teaching materials on the learning experience of fourth-grade students, addressing both the theoretical and practical aspects of educational technology integration.

RESULTS

Exploring the integration of Liveworksheets with a contextual approach in fourth-grade classrooms at SDN 41 Batu Putih offered profound insights into the dynamics of modern educational practices. The research unfolded layers of understanding regarding the efficacy and reception of this innovative teaching strategy through the methodical data collection, including student questionnaires and educator insights, particularly from the teacher who emphasized that Liveworksheet-assisted teaching materials significantly supported student comprehension due to their systematic arrangement and innovative presentation, making them highly suitable for various educational activities.

Student Engagement and Material Alignment

The student body's embrace of Liveworksheets was notably joyous. Detailed analysis of the student responses indicated a strong alignment with their expectations, with 72% affirming that the materials met or exceeded their anticipatory standards. This alignment indicates the Liveworksheets' resonance with the student's educational needs, showcasing their capacity to engage and facilitate learning effectively. For more details, see the following figure:

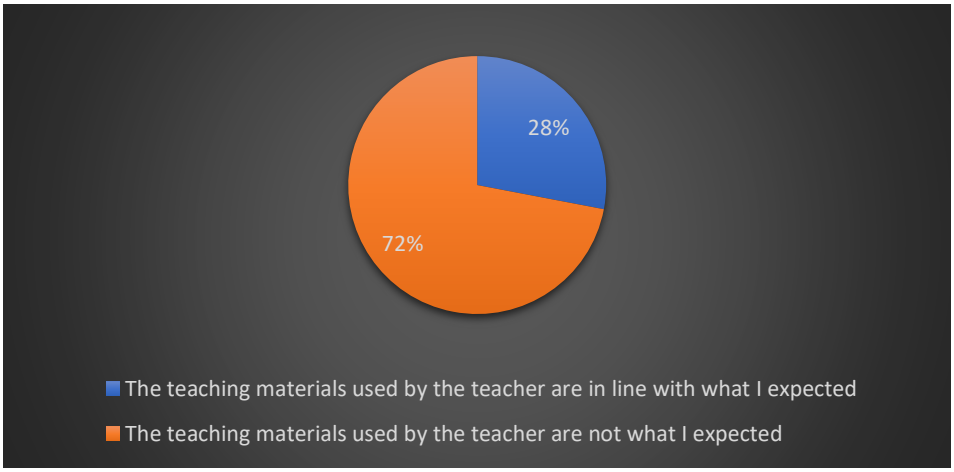

Figure 1. Student Engagement and Material Alignment

Comprehension of Material

Investigation into the students' grasp of the material presented through Liveworksheets revealed that an encouraging 77% found the content comprehensible, particularly the segments covering types of work. This notable comprehension rate underscores the effectiveness of Liveworksheets in making complex ideas more accessible to young learners. Nonetheless, the feedback from the 23% who encountered difficulties highlights a crucial area for further instructional development, pointing towards the necessity of incorporating adaptive teaching methodologies to support a wide array of learning preferences. For more details, see the following figure:

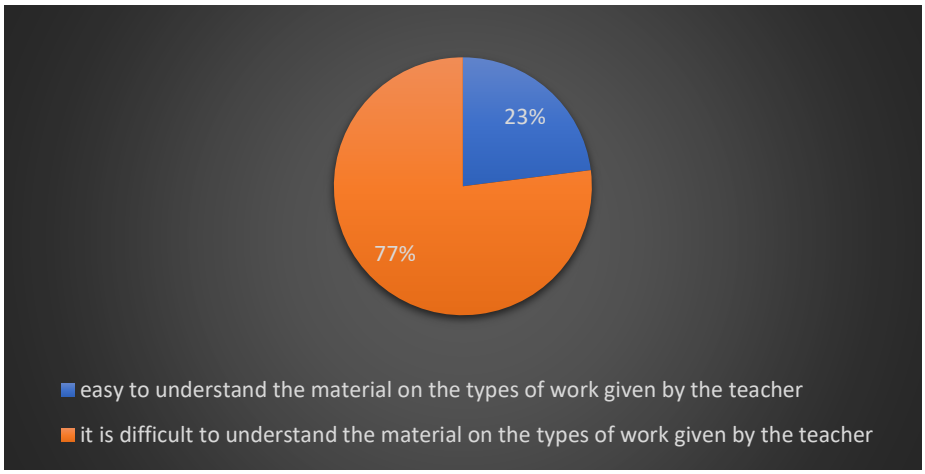

Figure 2. Comprehension of Material

Material Format Preferences

A deep dive into the students' material format preferences unveiled a strong inclination towards interactive and visually enriched content. Most 55% preferred materials that blend colour with illustrations, 28% were drawn to predominantly pictorial materials, and 17% leaned towards traditional text-heavy formats. This preference distribution echoes the cognitive benefits of visual aids in learning, supporting the argument for a more visual-centric approach in educational material design. For more details, see the following figure:

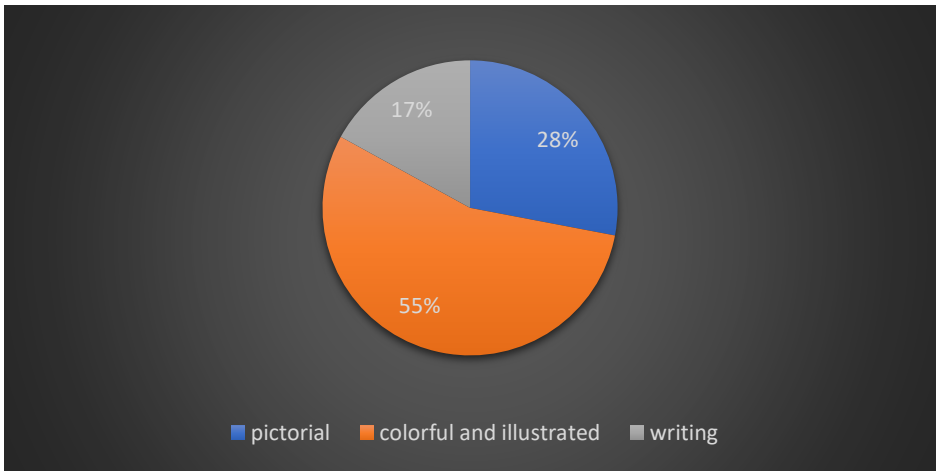

Figure 3. Material Format Preferences

The expert validation process of the teaching materials further solidified their educational value, with high validity scores across the board: linguistics at 94%, material content at 95%, and design at 94%. These scores affirm the pedagogical soundness of the materials and highlight their adherence to educational standards and responsiveness to learner diversity.

Validation Testing

Before the phase of practicality testing, the teaching materials underwent a critical validation process. This step was crucial in determining the quality of the materials developed for fourth-grade education. Experts in linguistics, content, and design meticulously reviewed the materials, each contributing specialized insights. The validation process yielded high validity scores, as detailed below, reflecting a solid adherence to educational standards and effectiveness in pedagogical delivery:

Table 1. Validation Results by Expert Evaluators

Validator	Validation Results	Information
Linguist	94%	Valid
Material expert	95%	Valid
Design expert	94%	Valid

These scores—94% from linguists, 95% from material experts, and 94% from design experts—underscore the materials' pedagogical reliability and capability to meet diverse learning needs effectively. Following this robust validation, the teaching materials were ready for practicality testing in a natural classroom environment, allowing students to directly interact with these innovative and contextually rich resources. As shown above, the validation results affirm the materials' high quality and alignment with educational objectives, setting a solid foundation for their subsequent practical evaluation.

Product Trial Phase

Following the validation process, the study progressed to the product trial phase, designed to evaluate the practicality of the Liveworksheet-assisted teaching materials through the lens of students and educators involved. This phase was conducted in small group settings, focusing on 18 fourth-grade students at SDN 41 Batu Putih to glean insights into the materials' effectiveness and usability within a real-world classroom context. The researchers directly facilitated these trials, meticulously documenting the responses and interactions of the participants with the teaching materials that integrated a contextual approach.

The results of these practicality tests are summarized below, showcasing individual scores alongside the aggregate performance to underscore the practical application of these materials:

Table 2. Practicality Testing Scores by Coding Respondent

Coding Respondent	total score obtained	Maximum score	Level of practicality (%)	Category
A	60	60	100%	Very practical
AH	57	60	95%	Very practical
AB	60	60	100%	Very practical
AY	58	60	96%	Very practical
APR	54	60	90%	Very practical
CL	58	60	96%	Very practical
F	60	60	100%	Very practical
HY	60	60	100%	Very practical
MFA	48	60	80%	Practical

MA	55	60	91%	Very practical
N	54	60	90%	Very practical
NA	60	60	100%	Very practical
R	54	60	90%	Very practical
T	56	60	93%	Very practical
PN	57	60	95%	Very practical
S	55	60	91%	Very practical
AJ	51	60	85%	Practical
MFN	60	60	100%	Very practical
Average level of practicality			**94,16%**	**Very practical**

Across the board, the teaching materials demonstrated a high level of practicality, with an average score of 94.16%, classifying them firmly in the "Very Practical" category. This significant score was derived from detailed assessments across the cohort, evaluating aspects such as the material's effectiveness in conveying concepts, promoting engagement, and facilitating learning outcomes.

The collective findings from these targeted practicality tests underscore the capacity of the developed teaching materials to enhance the learning experience significantly. By achieving an average practicality score of 94.16%, the materials not only meet but exceed the criteria for practical application, affirming their value and effectiveness in educational settings. This phase of the study reaffirms the potential of Liveworksheets, when supplemented with a contextual approach, to serve as a pivotal resource in modern educational strategies, offering students a dynamic and engaging learning environment.

Practicality Testing

Before exploring testing outcomes' practicality, clarifying the evaluation process's criteria is critical. The assessment framework for the developed teaching materials was intricately designed to span various educational goals. Key objectives included ensuring the materials conveyed knowledge effectively, nurtured student creativity, demonstrated usage efficiency, encouraged interactive learning environments and sustained student interest in the curriculum. Each criterion was thoughtfully examined to gauge the comprehensive practicality and influence of the teaching materials on the educational experience of fourth-grade students at SDN 41 Batu Putih. The table below showcases the results of this extensive assessment process:

Table 3. Assessment of Practicality Testing Aspects

Assessment Aspect	Percentage (%)	Category
Effective	100%	Very practical
Creative	100%	Very practical
Efficient	100%	Very practical
Interactive	100%	Very practical
Interesting	100%	Very practical

Following this rigorous assessment protocol, practicality testing engaged 18 fourth-grade students, culminating in an average score of 94.16%. This impressive outcome classified the materials within the "Very Practical" category. The evaluation thoroughly examined each criterion—effectiveness, creativity, efficiency, interactivity, and interest—with all dimensions achieving a stellar rating of 100%

in the "Very Practical" category. This achievement affirms the materials' success in meeting vital educational objectives and underscores their significant capability to enhance the learning experience substantially, offering students a more prosperous, engaging educational journey.

DISCUSSION

Researchers conducted an in-depth needs analysis to understand the shortcomings of available teaching materials before developing live worksheet-assisted E-LKPD. The study began by collecting data through observations and questionnaires aimed at students regarding using teaching materials in the current topic of types of occupations. The analysis results showed that students often face difficulties in understanding the material presented through traditional textbooks, which are less interactive. Feedback from students revealed that they prefer varied and interactive learning methods. Students stated that group learning is more interesting compared to individual learning. This information was highly valuable in the design of E-LKPD, which was subsequently designed to support group interaction and enrich learning experiences with more dynamic and visual content (Nupa et al., 2023; Pratiwi et al., 2024; Noviandari & Mursidi, 2019).

The designed E-LKPD integrates live worksheets that allow students to interact directly with the material online. This feature is designed to enhance student engagement through activities requiring critical thinking and teamwork while providing immediate feedback that can reinforce understanding of the material (Kwangmuang et al., 2021; Susilawati et al., 2023; Verawati et al., 2021). This design also considers ease of access and use for teachers and students, with a user-friendly interface (Heryanto et al., 2023; Syahria Fardinelly et al., 2024). Before being used in the classroom context, live worksheet-assisted E-LKPD undergoes a validation process to evaluate its validity and relevance to the established learning objectives. Validation is carried out by three expert professors in content, language, and design. They review the E-LKPD to ensure that its content and design meet existing educational needs and standards.

The validation results from the experts indicate that live worksheet-assisted E-LKPD has a high level of validity, with each expert giving scores above 90%. It indicates that the product is effective in its educational function and can be relied upon for teaching (Budiman et al., 2021; Marpaung et al., 2023; Ramdani et al., 2021). This validation is crucial to ensure that the developed E-LKPD is innovative and effective in delivering learning materials. Once validated, E-LKPD is tested in a real classroom environment at SDN 41 Batu Putih Kota Palopo involving fourth-grade students. This trial aims to assess the practicality and user acceptance of E-LKPD. Students and teachers use E-LKPD in several learning sessions and then provide feedback through questionnaires designed to measure various aspects of the practicality and effectiveness of E-LKPD (Farman et al., 2021; W. Hidayat & Aripin, 2023).

The results of the practicality trial show very high acceptance from teachers and students, with average practicality scores reaching 94% for students and 100% for teachers. This positive response indicates that live worksheet-assisted E-LKPD makes learning materials more engaging and understandable. It also demonstrates the potential of E-LKPD as an effective teaching aid, enriching student learning experiences and facilitating more interactive teaching.

CONCLUSION

This study at SDN 41 Batu Putih vividly illustrates the profound impact that innovative educational tools like Liveworksheets can have on enhancing student engagement and comprehension. Integrating such technologies through meticulous research and practical application meets and exceeds traditional educational standards, providing a blueprint for future teaching methodologies. The results unequivocally demonstrate the necessity of embracing new educational paradigms that align with today's students' diverse learning styles and needs. As educators, we must harness these tools to foster an educational environment that is informative but also inspiring and engaging. Let this research catalyze continued innovation in education, reminding us of the limitless potential that lies in integrating technology with learning to unlock the full potential of our future generations.

REFERENCES

Bārdule, K. (2021). E-learning Tools for the Flipped Learning in Elementary School. *Baltic Journal of Modern Computing*, *9*(4). https://doi.org/10.22364/bjmc.2021.9.4.05

Branch, R. M. (2009). *Instructional Design: The ADDIE Approach*. Springer. https://link.springer.com/book/10.1007/978-0-387-09506-6

Budiman, A., Samani, M., & Setyawan, W. H. (2021). The Development of Direct-Contextual Learning: A New Model on Higher Education. *International Journal of Higher Education*, *10*(2), 15-26. https://doi.org/10.5430/ijhe.v10n2p15

Farman, Hali, F., & Rawal, M. (2021). Development of E-LKPD Using Live Worksheets for Online Mathematics Learning during Covid-19. *JME (Journal of Mathematics Education)*, *6*(1). https://doi.org/10.31327/jme.v6i1.1626

Heryanto, H., Tambun, S., Pramono, R., Priyanti, D., & Siregar, I. (2023). E-Learning quality: The Role of Learning Technology Utilization Effectiveness Teacher Leadership and Curriculum During the Pandemic Season in Indonesia. *International Journal of Data and Network Science*, *7*(4), 1451-1462. http://dx.doi.org/10.5267/j.ijdns.2023.8.017

Hidayat, W., & Aripin, U. (2023). How To Develop an E-Lkpd With a Scientific Approach To Achieving Students' Mathematical Communication Abilities? *Infinity Journal*, *12*(1), 85–100. https://doi.org/10.22460/infinity.v12i1.p85-100

Joshi, A., Kale, S., Chandel, S., & Pal, D. (2015). Likert Scale: Explored and Explained. *British Journal of Applied Science & Technology*, *7*(4), 396–403. https://doi.org/10.9734/bjast/2015/14975

Kwangmuang, P., Jarutkamolpong, S., Sangboonraung, W., & Daungtod, S. (2021). The Development of Learning Innovation to Enhance Higher Order Thinking Skills for Students in Thailand Junior High Schools. *Heliyon*, *7*(6). https://doi.org/10.1016/j.heliyon.2021.e07309

Magdalena, I., Sundari, T., Nurkamilah, S., Ayu Amalia, D., & Muhammadiyah Tangerang, U. (2020). Analisis Bahan Ajar. *Jurnal Pendidikan Dan Ilmu Sosial*, *2*(2), 311–326. https://ejournal.stitpn.ac.id/index.php/nusantara

Marpaung, A., Muchtar, Z., & Nurfajriani, N. (2023). Development of e-LKPD Assisted by Liveworksheets Based on HOTS in Chemistry Materials of Grade X Senior High School Even Semester of Merdeka Curriculum. *Proceedings of the 8th Annual International Seminar on Transformative Education and Educational Leadership*. https://doi.org/10.4108/eai.19-9-2023.2340420

Noviandari, H., & Mursidi, A. (2019). Relationship of Self Concept, Problem Solving and Self Adjustment in Youth. *International Journal for Educational and Vocational Studies*, *1*(6), 651-657. https://doi.org/10.29103/ijevs.v1i6.1599

Nupa, N., Mulawarman, W. G., & Haruna, J. (2023). Development of Teaching Materials for Writing Poetry Using Google Site for Grade X High School Students. *Jurnal Scientia*, *12*(03), 3058-3065. https://doi.org/10.58471/scientia.v12i03.1666

Pratiwi, W. O., Sunyono, S., & ... (2024). Unveiling the Needs for Ethnoscience-Based E-Worksheets to Enhance Nature of Science and Environmental Awareness of Elementary School Students. *Indonesian Journal of Science and Mathematics Education*, *07*(March), 118–136. https://doi.org/10.24042/ijsme.v5i1.21099

Rahmah, N., Munir, N. P., Musa, L. A. D., Salmilah, Ihsan, M., & Juleha. (2023). *Liveworksheets: E-LKPD Geometry Based on Contextual Junior High School Level* (Vol. 1). Atlantis Press International BV. https://doi.org/10.2991/978-94-6463-148-7_11

Ramdani, A., Jufri, A. W., Gunawan, G., Fahrurrozi, M., & Yustiqvar, M. (2021). Analysis of Students' Critical Thinking Skills in Terms of Gender Using Science Teaching Materials Based on the 5E Learning Cycle Integrated with Local Wisdom. *Jurnal Pendidikan IPA Indonesia*, *10*(2), 187-199. https://doi.org/10.15294/jpii.v10i2.29956

Susilawati, E., Taufiq, A. U., & Hasanah, U. (2023). Development of Liveworksheet-Based Interactive LKPD on the Biodiversity Material of Class X. *BIO-INOVED : Jurnal Biologi-Inovasi Pendidikan*, *5*(1), 17. https://doi.org/10.20527/bino.v5i1.14719

Syahria Fardinelly, Adeng Slamet, & Rahmi Susanti. (2024). Electronic Liveworksheet- Based LKS Teaching Materials for Middle School Science Learning. *Journal of Educational Sciences*, *8*(1), 118–127. http://dx.doi.org/10.31258/jes.8.1.p.118-127

Verawati, A., Agustito, D., Pusporini, W., Utami, W. B., & Widodo, S. A. (2022). Designing Android Learning Media to Improve Problem-Solving Skills of Ratio. *Advances in Mobile Learning Educational Research*, *2*(1), 216-224. https://doi.org/10.25082/AMLER.2022.01.005

Vinca Rosea Cristy, L., & Ditawati Nur Pamenang, F. (2023). Development of Ethnoscience-Based Student Worksheets of Redox Reactions, Volta Cells, and Corrosion Using Liveworksheets. *Jurnal Pendidikan Kimia*, *15*(3), 182–190. https://doi.org/10.24114/jpkim.v15i3.51211

Wiono, W. J. (2023). Efforts to Improve Critical Thinking Skills with Scientific and Gender-Based Liveworksheets. *Phenomenon: Jurnal Pendidikan MIPA*, *13*(1), 31-46. https://doi.org/10.21580/phen.2023.13.1.13249

Yusro, A. C., Safitri, W., Ngabdiningsih, S. W., & Taqwim, M. A. (2023). Development of Students' Science Worksheets Based on Liveworksheet As Alternative Learning Resources for Junior High School Students. *QALAMUNA: Jurnal Pendidikan, Sosial, Dan Agama*, *15*(1), 133–146. https://doi.org/10.37680/qalamuna.v15i1.2406