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Development of Discovery Learning-Based E-Worksheet Integrated with Ethnoscience on Acid-Base Material

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Abstract: This study aims to develop an e-LKPD based on discovery learning integrated with ethnoscience on acid-base material. The background of this study is based on the problem of low student understanding of the acid-base concept, the lack of visual and interactive media, and the limited use of technology in chemistry learning. This research is a design research study using the development model by Plomp, which consists of three stages: preliminary research, development/prototyping, and assessment phase. The results of the study show that the developed learning media is valid with an Aiken's V value of 0.94, after being validated by seven experts (four content validators and three media validators). The practicality test indicates that the media is highly practical, with a practicality level of 98.5%. Meanwhile, the effectiveness test shows that the media is effective, proven by the learning outcomes of students using the e-LKPD being significantly higher than those in the class that did not use the developed e-LKPD. Therefore, the e-LKPD based on discovery learning integrated with ethnoscience on acid-base material that was developed is feasible to be used as an innovative alternative in chemistry learning to improve student learning outcomes.

Keyword: Aiken's V; Discovery learning; e-LKPD; Ethnoscience; T-test.

Introduction

Education is a crucial aspect of human life. Through education, high-quality and dignified human resources can be developed. One way to improve the quality of human resources in Indonesia is by equipping students with relevant skills to face 21st-century challenges. 21st-century learning emphasizes the development of critical thinking, collaboration, communication, and creativity skills. The integration of technology into the learning process becomes highly relevant to optimize the achievement of these goals. 21st-century learning requires students not only to master subject matter but also to apply that knowledge in real-life situations and adapt to rapid technological advancements (Muhali, 2019).

The development of E-LKPD (Electronic Student Worksheet) as a digital solution to traditional LKPD offers various advantages, such as ease of distribution and assignment collection, more efficient data management, and integration with various interactive learning media. E-LKPD supports 21st-century skills such as digital literacy, virtual collaboration, and the ability to provide direct feedback that helps students progress more quickly. E-LKPD also allows for deeper technological integration in learning, such as multimedia and interactive applications, which can enrich students' learning experiences. With E-LKPD, learning can become more engaging, relevant, and aligned with the needs of students, particularly in chemistry education.

Chemistry is a branch of natural science that studies everyday phenomena. It not only requires students to master concepts but also to understand and apply those concepts or theories in daily life, so that students can truly comprehend the material being studied. Chemistry

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learning should focus on activities that encourage students to be actively involved. Therefore, teachers need to use creative and innovative teaching materials so that students can discover new knowledge independently (Wahjudi, 2015).

However, although many chemistry topics can be found in everyday life, school learning often remains limited to concepts, laws, and theories taught only through textbooks. This reduces students' opportunities to gain a more contextual understanding of the material. Based on interviews conducted by the researcher with several teachers, it was found that students still struggle to understand chemistry, especially the topic of acids and bases. Teachers reported that many students misunderstand the concept of acids and bases and make errors in calculating pH. While teachers have begun to use non-printed teaching materials, these materials are still very basic. This aligns with research by Yotiani et al. (2016), which stated that difficulties in understanding acid-base concepts are due to a lack of real-life examples that connect the concepts with daily life. Fitriana et al. (2020) also explained that students' difficulties with the acid-base topic are mainly caused by a lack of interactive teaching methods, where students merely listen to lectures and rarely get opportunities to apply the concepts in real-life situations.

One approach to enhancing students' understanding is by integrating local culture into learning. Dewi et al. (2019); Rahayu & Sudarmin (2015) stated that the use of ethnoscience—i.e., the transformation of local knowledge into scientific knowledge—can help students grasp the material more easily. By connecting learning material with local wisdom, students not only find it easier to understand the taught concepts but also gain knowledge of their own culture, which is relevant in the modern era. Therefore, it is important to foster a love for culture and local wisdom through educational media (Zulfah, 2018).

Discovery learning-based E-LKPD integrated with ethnoscience is an E-LKPD that helps students deeply understand material by discovering existing concepts or theories through stimulation, problem identification, data collection, data processing, verification, and generalization, which are all connected to local wisdom and culture (Mukti et al., 2022). This E-LKPD encourages students to be actively involved in the learning process by constructing their own knowledge through direct experience (Mawaddah & Maryanti, 2016).

Discovery learning provides students with the opportunity to learn actively by investigating problems relevant to their lives (Mawaddah & Maryanti, 2016; Yani & Yerimadesi, 2023). Through this approach, students can develop their critical and creative thinking skills, as well as enhance their understanding of more complex chemistry concepts. Students do not merely learn theory, but also understand its applications in real life. Students are expected not only to memorize acid-base theories but also to apply the concepts in broader contexts, develop critical thinking skills, and find new ways to solve problems they encounter. Such learning is expected to provide meaningful experiences for students and help them understand the subject matter more comprehensively.

Based on this background, the researcher aims to design and develop a discovery learning-based E-LKPD integrated with ethnoscience on the topic of acids and bases, which can improve students' understanding of acid-base concepts and support the development of skills relevant to the needs of 21st-century education.

Method

Research Method

This study employed a Research and Development (R&D) approach using the Plomp development model (2013), which consists of three main phases: (1) Preliminary Research, (2) Development or Prototyping Phase, (3) Assessment Phase.

The research was conducted at Universitas Negeri Padang and SMAN 2 Solok during the second semester of the 2024/2025 academic year. The validity of the product was assessed by experts, practicality was tested by chemistry teachers and students, and effectiveness was measured through pretest and posttest assessments between the experimental class (XI F5) and control class (XI F6), selected randomly based on normality and homogeneity criteria.

Research Procedure

Preliminary Research

Needs analysis was conducted through questionnaires and interviews with teachers and students to identify problems in learning acid-base materials. A literature review was also carried out on e-worksheets (e-LKPD), discovery learning, ethnoscience, and relevant educational software.

Development/Prototyping Phase

Prototype Design: Included determining the content, designing learning activities, identifying core competencies and indicators, preparing learning resources, and developing the e-LKPD.

Formative Evaluation: Involved self-evaluation, expert validation (by chemistry lecturers and teachers, as well as educational technology experts), and practicality testing by teachers and students through *one-to-one* and *small group* methods.

Assessment Phase

The effectiveness of the e-LKPD was tested through pretest and posttest scores. Classes were selected randomly after meeting the normality and homogeneity assumptions. The experimental class used the developed e-LKPD, while the control class used conventional learning materials.

Research Instruments

The instruments used included: Questionnaires for teachers and students (in the preliminary phase); Validation sheets and self-evaluation forms (in the development phase); Practicality questionnaires for teachers and students; and Pretest and posttest questions, consisting of 13 items adapted from a validated test by Isdayanti et al. (2022), aligned with learning objectives and difficulty level distribution (easy, moderate, hard).

Data Analysis Techniques

Validity Analysis: Used Aiken's V formula; Practicality Analysis: Used percentage calculations based on obtained scores versus maximum scores; Effectiveness Analysis; and Prerequisite tests: Normality and homogeneity tests using SPSS, *N-Gain test*: To measure learning improvement, *Independent T-Test*: To examine whether there were significant differences in learning outcomes between the experimental and control groups.

Result and Discussion

This study followed the Plomp (2013) development model, consisting of three phases: preliminary research, development/prototyping, and assessment.

Preliminary Research Phase

The development of a discovery learning–based e-worksheet (e-LKPD) integrated with ethnoscience on acid–base content is motivated by various challenges identified in preliminary studies, including students' difficulties in understanding abstract concepts such as pH, ionization reactions, and ion concentration calculations, which are further exacerbated by limited laboratory equipment and learning materials that do not fully support independent and in-depth learning. Existing computer-based teaching materials used by teachers are still relatively simple and insufficiently interactive, so they have not optimally enhanced students' motivation and conceptual understanding. At the same time, questionnaire results indicate that conventional methods such as lectures and textbook-based learning are perceived as uninteresting and monotonous, leading to low learning motivation, whereas students express a stronger preference for digital learning, particularly in the form of e-LKPD, which they consider more interactive, easily accessible via smartphones, and capable of presenting content visually and contextually. Digital e-LKPD based on ethnoscience has the potential to contribute positively to increasing learning motivation and the perceived relevance of chemistry content to daily life (Yasir, 2024), while the discovery learning approach encourages students to take an active role through stages of exploration, problem identification, data collection and processing, verification, and drawing conclusions, transforming them from passive recipients of information into active constructors of knowledge (Santoso et al., 2024). The integration of ethnoscience in e-LKPD further links chemical concepts with local cultural practices and phenomena, enabling students to grasp abstract ideas through familiar contexts and thereby making learning more meaningful (Arfianawati et al., 2016). Supported by adequate technological infrastructure, such as students' ownership of Android devices and access to the internet, the development of discovery learning–based e-LKPD integrated with ethnoscience is viewed as a strategic solution to address the challenges of chemistry learning in the digital era, as well as to assist teachers in presenting acid–base material in a more engaging, contextual, and locally relevant way (Sela, 2025).

Development / Prototyping Phase

Prototype Design

Based on the initial study, a prototype e-LKPD based on discovery learning integrated with ethnoscience was developed for the topic of Acids and Bases. The digital product was designed to support active, contextual, and meaningful learning. Its structure included: a cover, instructions, learning objectives, materials, exercises, and a summary.

Content was delivered using discovery learning syntax and incorporated local cultural elements to help students relate scientific concepts to daily life. The e-LKPD was designed to be accessible both online and offline. The first page displayed in the developed e-LKPD is the cover page, as shown in Figure 1(a).

After the cover page, the next page that appears is the foreword page, which can be seen in Figure 1(b). Following the foreword is the user guide page, as shown in Figure 1(c). The next page displayed is the main menu, which contains four buttons: Competencies, Materials, Exercises, and Summary. The main menu layout is illustrated in Figure 1(d). When the user clicks the Competencies button, the page navigates to the Learning Objectives section, as shown in Figure 1€. This section outlines the learning goals that students are

expected to achieve. Clicking the Materials button takes users to the Materials Menu, which consists of three sub-buttons: Acid-Base Theory, Acid-Base Indicators, and pH Calculations, as shown in Figure 1(f).

When one of the sub-buttons is clicked, the user is directed to the corresponding Sub-Material Page, shown in Figure 2. Upon clicking a sub-material, the user is taken to the content page, where the material is delivered using the syntax of discovery learning.

The next button in the main menu is Exercises, which presents a collection of questions that students can complete to assess their understanding of the acid-base topic. This page is illustrated in Figure 3.

Formative Evaluation and Prototype Revision

Self-Evaluation Stage

This stage involves the researcher reflecting on the initial e-LKPD prototype to assess its structure, content, and design based on discovery learning principles and ethnoscience integration. Three aspects were evaluated: content, visuals, and language. Two main weaknesses were identified—unclear instructional language and unappealing visuals—both of which were revised accordingly.

Figure 1. Display of developed media: (a) cover page; (b) foreword page; (c) user guide page; (d) main menu page; (e) competency page; and (f) materials menu page

Figure 2. Sub-Material Page

Figure 3. Exercise and summary page

Expert Review Stage

Validation involved 7 experts (4 content and 3 media validators). Aiken's V was used for analysis. Content Validation Results (Table 1).

Table 1. Content Validation Results

Evaluated Aspect	Score
Content Aspect	0.84
Presentation Aspect	0.82
Language Aspect	0.96
Contextual Aspect	0.83
Average	0.86

The validation results of the discovery learning–based e-LKPD integrated with ethnoscience on acid–base material show that the developed product falls into the valid category across all assessment aspects, with Aiken's V values for each aspect ≥ 0.82. This indicates that both the assessment instruments and the product itself are of high quality and suitable for use in learning. In the aspect of content feasibility, the e-LKPD obtained a score of 0.84, which shows that the material presented is aligned with the learning objectives, covers acid–base concepts accurately, factually, and systematically, and is supported by the integration of ethnoscience that links chemical concepts with local culture, thereby strengthening the contextual dimension of learning (Asmaningrum & Kristyasari, 2023).

The presentation feasibility aspect, with a score of 0.82, reflects that the structure of the e-LKPD is arranged in a coherent, logical, and engaging manner, following the syntax of discovery learning starting from stimulation, problem identification, data collection and processing, verification, through to drawing conclusions, and is complemented by supporting media such as images, videos, and interactive activities that help students' understanding while maintaining their attention and active participation. In the language feasibility aspect, a score of 0.96 indicates that the language used in the e-LKPD is very good, communicative, unambiguous, in accordance with standard Indonesian language rules (PUEBI), and aligned with the cognitive development level of Grade XI students, thus supporting readability and independent learning. Meanwhile, the contextual feasibility aspect obtained a score of 0.83, which signifies the success of the e-LKPD in connecting acid–base concepts with real-life phenomena and local cultural practices through an ethnoscience approach, for example by using natural materials familiar in students' daily lives, as well as exercises and activities designed to foster critical thinking and contextual problem-solving skills (Agil et al., 2023). Overall, these four aspects confirm that the discovery learning–based e-LKPD integrated with ethnoscience on acid–base material has met the criteria of a valid and appropriate teaching material for use in chemistry learning, in terms of content, presentation, language, and its relation to local cultural context.

Table 2. Media Validation Results

Evaluated Aspect	Score
Visual Appearance	0.97
Programming	0.99
Usability	0.98
Average	0.98

Validation of the discovery learning–based e-LKPD integrated with ethnoscience on acid–base material was carried out to ensure that the product is feasible not only in terms of content, but also in terms of visual design, programming, and ease of use in learning. Three main aspects were assessed in this media validation, namely the display aspect, the programming aspect, and the utilization aspect. The assessment was conducted by expert validators using a media validation instrument, and the results were analyzed using Aiken's V index. In the display aspect, the media obtained a validation score of 0.97, which falls into the very valid category. The visual appearance of the e-LKPD was designed by considering the alignment between the cover and the material presented. The cover design clearly and attractively represents the identity and substance of the acid–base topic, thus stimulating students' initial interest. The layout is neat and proportional between text and visual elements, maintaining visual comfort and readability. The choice of font type, size, and color follows principles of readability and aesthetics, thereby facilitating students' understanding. In addition, the supporting images and videos are clear, relevant to the material, and enrich students' learning experiences, while the navigation buttons are clearly designed and functional, supporting ease of use of the media as a whole (Sudarsmin & Tresnawati, 2021).

In the programming aspect, the e-LKPD obtained a validation score of 0.99, which is also categorized as very valid. This indicates that the e-LKPD application has been designed with intuitive and user-friendly

navigation. Each button functions properly and consistently, allowing users to quickly understand how the media works. The application's response speed to user commands is high, creating a smooth and efficient digital learning experience, and the programming system ensures that students can access all features of the e-LKPD without significant technical obstacles.

In the utilization aspect, the e-LKPD obtained the highest score, 0.98, also in the very valid category. This shows that the media is highly suitable to be used in the chemistry learning process. Instructions for use and the learning flow are clearly arranged so that students can follow learning activities independently. The visual appeal—consisting of colors, illustrations, and font styles—creates a pleasant impression and can increase students' interest and concentration (Siagian et al., 2022). The integration of local cultural values through ethnoscience further strengthens the learning context, making this e-LKPD not only attractive but also culturally meaningful and applicable (Asmaningrum & Kristyasari, 2023). After the media validation stage was completed and all aspects achieved very valid results, the process continued to the practicality assessment stage, conducted through two approaches: by teachers as instructional users and by students through two methods, namely one-to-one testing and small group testing, which are explained in the following section.

Teacher Practicality Test

Table 3. Teacher Practicality Test

Evaluated Aspect	Score	Category
Usefulness	97	Very Practical
Ease of Use	100	Very Practical
Attractiveness	100	Very Practical
Clarity	98	Very Practical
Efficiency	97	Very Practical
Average	98	Very Practical

The practicality test was carried out to determine the extent to which the developed e-LKPD can be applied easily and effectively in the learning process. Based on the results of the practicality assessment by the teacher on five main aspects—usefulness, ease of use, appeal, clarity, and efficiency—the e-LKPD obtained a very practical category, indicating that it is suitable for use in chemistry classes, particularly on Acid–Base material.

In the aspect of usefulness (usable), the e-LKPD obtained a score of 97%, indicating that this medium is highly helpful for teachers in delivering the material. The content is presented in a structured and easy-to-understand manner, thereby accelerating the mastery of both basic and advanced concepts. The e-LKPD also functions as a supplementary learning resource rich in visualizations and interactive activities, and is flexible enough to be adapted to each teacher's teaching style. Through the ethnoscience approach, this medium also fosters students' curiosity because the material is linked to relevant local cultural contexts.

The ease of use (easy to use) aspect obtained a score of 100%, showing that the e-LKPD has a simple and intuitive interface. Both teachers and students can quickly understand how to access and use the features in the e-LKPD without confusion. This medium strongly supports independent learning because it can be accessed anytime and anywhere. In addition, the e-LKPD encourages students to relate chemical concepts to everyday life phenomena, making learning more meaningful and applicable.

The appeal (appealing) aspect also obtained a score of 100%, indicating that the e-LKPD is very well designed visually. The combination of colors, font choices, and visual elements such as images and videos is presented proportionally and aesthetically. This attractive visual design not only beautifies the appearance but also serves to clarify the material and maintain students' focus and interest throughout the learning process.

For the clarity (clarity) aspect, the e-LKPD obtained a score of 98%, which still falls into the very practical category. The learning objectives are formulated clearly and are aligned with the content and achievement indicators. The material is delivered in communicative and well-structured language, making it easy for students to understand. The information presented is free from ambiguity and successfully guides students in building their understanding independently (Sanjaya, 2011).

Finally, the efficiency (efficiency) aspect obtained a high score of 97%, indicating that the e-LKPD is very efficient to use. The product can be accessed without requiring additional applications and is compatible with various devices, especially Android-based smartphones.

Thus, the results of the practicality test show that the discovery learning–based e-LKPD integrated with ethnoscience on acid–base material is a highly practical, functional, and feasible medium to be used in supporting contextual and interactive chemistry learning.

Table 4. One-to-One Practicality Test

Evaluated Aspect	Score	Category
Ease of Use	100	Very Practical
Attractiveness	100	Very Practical
Efficiency	100	Very Practical
Usefulness	97	Very Practical
Average	99	Very Practical

Table 5. Small Group Practicality Test

Evaluated Aspect	Score	Category
Ease of Use	99	Very Practical
Attractiveness	100	Very Practical
Efficiency	99	Very Practical
Usefulness	98	Very Practical
Average	99	Very Practical

The practicality test involving students aimed to evaluate how effectively and efficiently the developed e-LKPD could be used by the end users—students with high, medium, and low academic abilities. The evaluation focused on four key aspects: ease of use, attractiveness, efficiency, and benefit, all of which received a very practical category.

In terms of ease of use, the e-LKPD achieved an average score of 99.5%, indicating it was designed for user accessibility. Instructions were clearly and simply presented, enabling students across ability levels to quickly understand how to navigate the e-LKPD. The content was conveyed in plain language, supported by readable fonts and interactive, user-friendly features.

The attractiveness aspect received a perfect score of 100%, demonstrating high student engagement. Visual elements such as cover design, layout, font choices, and integrated videos were aesthetically pleasing and proportionally arranged. The instructional videos were both relevant and engaging, helping clarify acid-base concepts in an enjoyable way.

For efficiency, the e-LKPD scored 99.5%, indicating strong time and resource efficiency. The materials were systematically presented and easy to grasp, allowing students to learn effectively in a shorter period. Its accessibility anytime and anywhere supports independent learning, which is essential in today's digital and student-centered learning environments.

Lastly, the benefit aspect scored 97.5%, highlighting the e-LKPD's significant contribution to the learning process. It not only aids in mastering complex concepts but also enhances self-directed learning. The contextual, clear, and interactive content boosts both interest and motivation in studying chemistry (Sariani, 2022).

In conclusion, the student-based practicality test confirms that the ethnoscience-integrated discovery learning e-LKPD on acid-base material is highly practical, engaging, effective, and relevant for modern, contextual chemistry instruction (Sariani & Suarjana, 2022).

Assessment Phase

Normality Test

Using Shapiro-Wilk in SPSS 21, pretest and posttest data from both experimental and control groups were normally distributed ($p > 0.05$).

Table 6. Normality Test

Result	Kolmogorov-Smirnov Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
Pretest Class Control	0.156	33	0.040	0.940	33	0.068
Posttest Class Control	0.132	33	0.151	0.949	33	0.121
Pretest Class Experiment	0.173	33	0.013	0.956	33	0.203
Posttest Class Experiment	0.140	33	0.099	0.940	33	0.070

Table 7. Homogenity Test

Result	Levene Statistic	df1	df2	Sig.
Based on Mean	0.073	3	128	0.974
Based on Median	0.061	3	128	0.980
Based on Median and with adjusted df	0.061	3	123.937	0.980
Based on trimmed mean	0.080	3	128	0.971

Table 8. N-Gain Test

Class	N	Mean	Std. Deviation	Std. Error Mean
Control	33	0.3768	0.17437	0.03035
Experiment	33	0.6741	0.21275	0.03703

The experimental class achieved an N-Gain score of 0.67, indicating a moderate level of improvement, while the control class obtained an N-Gain score of 0.37, also in the moderate category. These results show that the experimental group experienced a greater increase in learning outcomes compared to the control group.

At this evaluation stage, learning was carried out in two classes: an experimental class and a control class. In both classes, students were given a pretest before learning to measure their initial knowledge. In the experimental class, the lowest number of correctly answered questions was 1 out of 13 and the highest was 9, with scores ranging from 7.69 to 69.2. In the control class, the lowest number of correctly answered questions was 2 out of 13 and the highest was also 9, with scores ranging from 15.4 to 69.2. The pretest scores were

influenced by students' prior knowledge, which was obtained from a reading assignment given by the teacher in the previous meeting. Students who completed the reading task tended to obtain higher pretest scores, while those who did not complete it had lower prior knowledge, resulting in lower pretest scores.

Table 9. Independent T-Test

Result	Levene's Test for Equality of Variances		Test for Equality of Means				95% Confidence Interval of the Difference
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower
N-Gain Equal variances assumed	1.700	0.197	-6.208	64.000	0.000	-0.29727	0.04788	-0.39230
Equal variances not assumed			-6.208	61.853	0.000	-0.29727	0.04788	-0.39300

After the pretest, students in the experimental class learned using the developed e-LKPD, while the control class received instruction without the e-LKPD. At the end of the lesson, students were given a posttest using the same set of questions as the pretest to determine the extent to which the use of the e-LKPD influenced students' knowledge. Based on the posttest results in the experimental class, the lowest number of correctly answered questions was 6 out of 13 and the highest was 13, with scores ranging from 46.2 to 100. In the control class, the lowest number of correctly answered questions was 5 out of 11 and the highest was 12, with scores ranging from 38.4 to 92.2.

The pretest and posttest scores were then analyzed using N-Gain and a t-test. The N-Gain value in the experimental class was 0.67, indicating a moderate increase in learning outcomes after students received treatment in the form of using the developed e-LKPD. In contrast, the control class, which did not use the e-LKPD, showed an N-Gain value of 0.37, which also falls into the moderate category. The t-test yielded a significance value of 0.000, which is smaller than the significance level of 0.05. This indicates that the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted, meaning that there is a significant difference in the improvement of learning outcomes between the experimental and control classes. In other words, the developed e-LKPD has a significant effect on students' scores (Arifin, 2009).

From the students' perspective, the developed e-LKPD is considered attractive. It increases reading interest and learning motivation, so that students who initially did not complete the reading task became more interested in studying the material presented in the e-LKPD. The e-LKPD contains complete and easy-to-understand material, is easy to read anywhere, and is very helpful in understanding the content (Vadilla, 2022).

Based on these two forms of evaluation, it can be concluded that the developed e-LKPD is effective for implementation and use in the learning process. This is in line with Sariani & Suarjana (2022), who states that e-LKPD used in instruction must consider its effectiveness in use. Judging from students' learning outcomes, it is evident that the e-LKPD developed by the researcher is effective in improving students' learning achievement.

Conclusion

This study successfully developed a discovery learning-based e-LKPD integrated with ethnoscience on acid-base material, following the Plomp development model. The e-LKPD was declared highly valid with a score of 0.92 based on validation by seven experts, consisting of four content validators and three media validators. The practicality test showed a score of 98.5%, indicating that the e-LKPD is very practical for classroom use. Furthermore, the effectiveness test demonstrated that the e-LKPD is effective in improving students' learning outcomes, as evidenced by the increased scores after its implementation.

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Author Contributions
Astuti: writing-original draft preparation, result, discussion, methodology, conclusion; dan Desy Kurniawati: designing research, monitoring research, proofreading, review, and editing.

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The authors declare no conflict of interest.

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