



The Validity and Practicality of SSCS-Based Student Worksheet on Ecology Material and Environmental Change

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Abstract: This research aims to produce student worksheet based on SSCS (Search, Solve, Create and Share). This type of research is development research using the Plomp model. The development stage of this model starts from the initial investigation stage, the development or prototyping stage, and the assessment stage. The instruments used in this development research were teacher questionnaire sheets, student response questionnaire sheets, self-evaluation sheets, and SSCS-based LKPD validation sheets (Search, Solve, Create and Share) by experts, as well as SSCS-based LKPD practicality assessment sheets (Search, Solve, Create and Share) which is filled in by teachers and students. The results showed that the SSCS-based LKPD (Search, Solve, Create and Share) was very valid with a score of 86.31%. The practicality assessment of student assessment in field trials (group evaluation) with a score of 92.00% with very practical criteria, and the practicality assessment by the teacher obtained a score of 96.00% with very practical criteria. It can be concluded that the LKPD based on SSCS (Search, Solve, Create and Share) that has been developed is included in the category of very valid and very practical.

Keywords: LKPD Validity; LKPD Practicality; LKPD; SSCS

Introduction

Education is a very important process. In the implementation of education, both educators and students must be in a "free-democratic" condition (Rini, 2013). This relates to the process of increasing knowledge and skills for students (Kosilah & Septian, 2020; Sholichin et al., 2022). Education cannot be separated from teaching materials, teaching materials can act as a reference that can be used to direct the learning process, this is done so that learning can be achieved well, and learning is more directed and learning objectives can be achieved optimally (Kosasih, 2021).

Biology learning in schools generally pays little attention to students' thinking skills. This is due to learning that still uses conventional models. The conventional model itself is teaching by means of lectures (Utami, 2011). Based on experience and developments in the era of globalization, the Indonesian

government has made development efforts to improve the quality of education in Indonesia. One of the latest efforts made by the government is to create a curriculum that can improve the quality of education and reform the education system (Yulia & Kuswanto, 2023).

Based on the data obtained from students at SMAN 3 Padangsidempuran, it is known that students still have the level of critical thinking is still low, this can be seen from the results of observations which show that as much as 40.4% of students' critical thinking skills are still low, as much as 39.6% of students' critical thinking skills are moderate and 20% of critical thinking skills are already good. This is due to the lack of teaching materials that can develop students' thinking skills.

The use of teaching materials can provide convenience for teachers and support the smooth learning process in schools, especially in developing students critical thinking skills (Ichsan et al., 2020). One of the teaching materials that can help improve students' thinking skills is LKPD. LKPD is an alternative teaching

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material that can help students add information about the concept of the material being studied (Yola & Kurniawati, 2023). LKPD can familiarize students with critical thinking regarding subjects that have been previously studied (Djamaluddin, 2019). LKPD is also used as a teaching medium that helps students develop the potential that exists within each student (Tsarapkina et al., 2021).

LKPD teaching materials can also be developed with learning models, one of which is the SSCS learning model (*Search, Solve, Create, and Share*). SSCS is a learning model that directs students to construct knowledge, this SSCS also teaches a problem-solving process and provides opportunities for students to train and improve their problem-solving skills, so that this learning model can facilitate the development of students' thinking skills. According to Fatimah & Kurniawati (2014) the critical thinking skills of students taught by the SSCS model problem solving approach are higher than the critical thinking abilities of students taught by conventional learning. Learning using the SSCS model directs students to work together to find a solution to a problem, so that learning will be more meaningful for students (Aurilia Hakim et al., 2020).

The results of observations made on 60 students said that there was a lack of teaching materials such as LKPD and 92.9% of students thought they agreed to develop LKPD on Ecosystem and Environment material. The biology teacher at SMA N 3 Padangsidempuan also revealed that the lack of availability of teaching materials and LKPD was one of the obstacles to achieving learning objectives, and the biology teacher at SMA N 3 Padangsidempuan agreed to develop SSCS-based LKPD to improve students' critical thinking skills on ecological material and environmental changes.

The development of Search, Solve, Create and Share (SSCS)-based LKPD which is suitable for use as a learning resource for students in this learning activity is expected to improve students' ability to think critically (Hakim et al., 2020; Munawaroh, 2022). The author designed this LKPD according to the syllabus. Based on these data, the researcher felt the need to develop a Search, Solve, Create and Share (SSCS) based LKPD to improve the critical thinking skills of class X students in biology.

Method

This type of research is research and development (research and development). This research aims to produce a product in the form of LKPD Based on valid and practical SSCS (Search, Solve, Create and Share). The e-module development will be carried out using the Plomp development model. The development of the

Tjeerd Plomp model consists of three stages, namely, the preliminary research stage, the development or prototyping stage, and the assessment stage (Plomp & Nieveen, 2014).

The SSCS-based LKPD test subjects (Search, Solve, Create and Share) were held in class X SMA Negeri 3 Padangsidempuan. The type of data collected in this study is primary data. Primary data types are data obtained directly through research instruments, namely qualitative and quantitative data. Qualitative data, namely in the form of the validator's opinion from the validation data as well as the opinions of teachers and students about the practicality of the developed LKPD. Meanwhile, quantitative data was collected through validation assessment sheets from experts, the practicality of teachers and students in SSCS Based LKPD (Search, Solve, Create and Share) (Sanchia & Faizah, 2019). SSCS is a learning model that uses a problem solving approach designed to develop critical thinking skills and increase understanding of scientific concepts (Utami, 2011).

The instrument used in this development research at the initial investigation stage was a questionnaire. Questionnaires are used to capture information and data needed in the development of teaching materials which are arranged based on the needs and suitability of information for students.

Result and Discussion

Initial Investigation Stage

The development process in this research begins at the initial research stage, which aims to find out the existing problems. The analysis carried out includes: problem/needs analysis, curriculum analysis, concept analysis, student analysis.

Based on the results of problem analysis through a questionnaire that was given to students of SMA Negeri 3 Padangsidempuan, as many as 85.7% of students thought that the material on ecology and environmental change was difficult material. and environmental changes including material that is difficult for students to understand. 71.4% of students think that there is a lack of availability of teaching materials that are in accordance with ecological material and environmental change, and as many as 92.9% of students agree to do the development of LKPD SSCS based (Search, Solve, Create and Share).

Based on curriculum analysis, it was found that in the 2013 curriculum on core competency 3 which reads "Understanding, applying, analyzing knowledge, factual, conceptual, procedural based on curiosity about science, technology, arts, culture, and humanities with

an insight into humanity, nationality, state, and civilization related to phenomena and events, as well as applying procedural knowledge in specific fields of study according to their talents and interests to solve problems.

Based on the core competencies in point 3 which are in accordance with the basic competencies in biology subjects to analyze information/data from various sources about ecosystems and environmental change and competency achievement indicators explain ecosystems and their constituent components and find factors that cause damage. However, the results of the curriculum analysis that has been carried out, it is known that there are no indicators that elevate/explain the perfect scientific approach.

Based on the analysis of the students, it was found that 85.2% of the students answered that the material on ecology and environmental change was difficult to understand because of the lack of appropriate teaching materials. 77.2% of students answered that they agreed with the development of worksheets on ecology and environmental change.

Stage of development or manufacture of prototypes (Development or Prototyping Phase)

The prototype development stage is the stage of making LKPD Based on valid and practical SSCS (Search, Solve, Create and Share). Validity aims to evaluate the LKPD that has been developed, this test is carried out by checking the suitability of the LKPD with the 2013 curriculum, grammar, presentation, appearance and scientific approach (Lestari et al., 2018). Lufri & Ardi (2017) also revealed that validation refers to the accuracy, meaning, and usability of a product developed by a researcher. This is in accordance with the opinion of Sugiyono (2019) which states that validity is the level of accuracy of the data that occurs in the research object with the actual data.

LKPD SSCS based (Search, Solve, Create and Share) can help students find the concept of Ecosystems and Environmental Change material in an easy way independently through the tasks and activities presented in the LKPD. In line with Fitriani et al. (2017) statement (2017) that one of the requirements for the diactive aspect of LKPD is to emphasize more on the process to find the material concept. The results of the needs analysis on LKPD, 76.7% of respondents stated that it was necessary to use LKPD and 85% agreed if it was in Ecosystem learning and Environmental Change using practicum methods. In accordance with what was revealed by Karsli & Sahin (2009) that the use of student worksheets is necessary in learning Ecosystem and

Environmental Change material, so that students know directly what will be observed.

LKPD SSCS based (Search, Solve, Create and Share) designed according to the results of the needs analysis LKPD students. The design results of student worksheets are adjusted to the needs and students' conditions in learning Ecosystem and Environmental Change material, sub concept of Ecosystem and Environmental Change. Student worksheet designs are created interesting, equipped with pictures and variations in LKPD so as not to seem monotonous so that it can attract students to learn it. The selection of the LKPD basis is the Search, Solve, Create, and Share model (SSCS) adapted to the scientific approach listed on curriculum 2013, and based on constructivism and learning theory contextual. The Search, Solve, Create, and Share (SSCS) model is wrong a learning model that directs students to construct knowledge, where teachers and students work together to find solutions to a problem, so that learning will be more meaningful to students student.

SSCS Model (*Search, Solve, Create, and Share*) this teaches a problem-solving process and provides opportunities for students to train and improve their problem-solving skills (Maimun & Bahtiar, 2022; Tiara et al., 2024), so that this learning model can facilitate the development of their thinking skills (Sari & Noer, 2017). Based on the results of (Fatimah & Kurniawati, 2014), namely the ability to think logically of students taught by the SSCS model problem solving approach is higher than the ability to think logically of students taught by conventional learning. The first advantage is that the teacher can maximally provide learning, meaning that it can make teachers and students active because this model places more emphasis on the student center. The second advantage can involve higher order thinking skills in learning. The second involves all students actively in the learning process. The third advantage can increase understanding between science and technology and society by focusing on real problems in everyday life. The fourth advantage provides an opportunity to gain direct experience in the problem solving process. The fifth advantage can make students use higher order thinking skills. The sixth advantage can provide opportunities for students to be responsible for the learning process,

Student activity sheets can be interpreted as sheets containing assignments that must be done by students. LKPD is defined as a printed teaching material containing assignments that students must do. As for LKPD based on SSCS (Search, Solve, Create and Share) can be seen in Figure 1.



Figure 1. LKPD cover display based on (*Search, Solve, Create and Share*)

At the stage of product development based on LKPD (*Search, Solve, Create and Share*), there is a validity test on LKPD based on SSCS (*Search, Solve, Create and Share*) carried out by a team of experts or experts (Expert review). LKPD development based on SSCS (*Search, Solve, Create and Share*) designed to assist students and teachers in the learning process. For this reason, the validation stage is carried out by a team of experts or experts (Expert review). The results of the expert or expert team validation (Expert review) can be seen in Table 1.

Table 1. LKPD Based Validity Test Results SSCS (*Search, Solve, Create and Share*)

Assessment Aspects	Mark (%)	Category
Content Aspect	88.12	Very Valid
Graphic Aspects	82.30	Valid
Language Aspect	89.00	Very Valid
Average Validity	86.31	Very Valid

Based on the results obtained from the validity test, it obtained an average value of 86.31% with a very valid category. This is supported by Arikunto (2021) opinion which states that if a data obtained from an average assessment of a product being developed is valid, it can be said that the product has been able to have an impact

in the form of an overview, development goals that are precise and correct with facts. and circumstances. The validation aspect carried out at the development stage is seen from 3 aspects, namely: content aspect, graphical aspect and language aspect. For more details, each of these aspects is described as follows.

Content Aspect

Aspects of the content based LKPD (*Search, Solve, Create and Share*) declared valid by the validator. The validity value on the content aspect is 88.12% with a very valid category. Based on the criteria for the content aspect, it is known that LKPD is based on (*Search, Solve, Create and Share*) that has been developed is in accordance with the syllabus and characteristics of students and can assist teachers in the learning process and can improve students' critical thinking skills. This is in line with Rafianti et al. (2020) who stated by using the *Search, Solve, Create and Share* (SSCS) learning model which makes students independent, active and focused on learning.

Graphic Aspects

LKPD based graphical aspects (*Search, Solve, Create and Share*) declared valid by the validator. The validity value on the content aspect is 82.30% with a valid category. Based on the criteria on the graphical aspect, it can be stated that LKPD is based on (*Search, Solve, Create and Share*) which is developed using the type and size of letters that can be read clearly and the use of proper punctuation. Next, the presentation of the pictures on the LKPD based on (*Search, Solve, Create and Share*) already has an explanation, size, and in accordance with the material presented. In accordance with the opinion of Prastowo (2015) which states that the presentation of images is necessary to support and clarify the content of the material, as well as to increase reader interest. In the graphic section it can be concluded that the LKPD is based on (*Search, Solve, Create and Share*) developed has an attractive appearance.

Language Aspect

Aspects of language based LKPD (*Search, Solve, Create and Share*) declared valid by the validator. The validity value on the content aspect is 8.00% with a very valid category. The aspect of language is an aspect that needs to be considered in the preparation of teaching materials and the language used should be simple and easy to understand. Based on the material developed, LKPD based (*Search, Solve, Create and Share*) stated that it has presented clear learning outcomes and material, lessons and evaluations that are in accordance with learning outcomes, has developed the correct concept and is in accordance with existing rules (Widyatmojo & Muhtadi, 2017).

The three aspects of LKPD validation evaluation are based on (*Search, Solve, Create and Share*) which have been described constitute a unified whole and mutually support each other to develop LKPD based on *Search, Solve, Create and Share* good and proper. This is in line with the research of Misbah et al. (2021), that the validity of the E-Module is seen from several aspects, namely the language aspect, the content aspect and the graphical/display aspect contained in the LKPD based (*Search, Solve, Create and Share*).

In the next stage, a one to one evaluation was carried out, namely an assessment carried out with representatives of LKPD users, namely 3 students with different ability levels. At this stage, the trials were carried out by students of SMAN 3 Padangsidempuan who had studied ecosystem material and environmental change. The results of one-to-one trials can be seen in Table 2.

Table 2. One Two One Evaluation Results

Assessment Aspects	Mark (%)	Category
Component		
Completeness	86.36	Very good
LKPD material	91.66	Very good
graphics	83.33	Good

From table 2 it can be seen that for all components it is good, where for the completeness component of the LKPD component it is at a score of 86.36% with a very good category, for the material component of LKPD it is at a score of 91.66% with a very good category and the graphic component is at score of 83.33% in good category. So it can be concluded that LKPD based on SSCS (*Search, Solve, Create and Share*) it is worth using according to one to one results.

Furthermore, students also provide input regarding the LKPD products that have been developed. Based on the results of the one to one evaluation validation, information was obtained that the LKPD was based *Search, Solve, Create and Share* which has been developed received a positive response from students. This can be seen from the results of the analysis which show that the completeness of the content, graphics and language has been fulfilled and is well available.

LKPD practicality assessment based on (*Search, Solve, Create and Share*) done step by step. The first assessment was carried out by means of a small group evaluation. Small group evaluation (small group) is carried out through a practicality questionnaire instrument given to students which aims to see the practicality of LKPD based on (*Search, Solve, Create and Share*). The results of the small group evaluation analysis obtained an overall practicality average value of 91.60%.

Assessment Stage

At this stage of the assessment, an assessment of LKPD is carried out based on (*Search, Solve, Create and Share*) that has been developed, while the assessment is carried out includes practical tests by students and practical tests by biology teachers. At this stage a LKPD assessment is carried out based on (*Search, Solve, Create and Share*) with a larger sample, in this case 74 students were used. The results of the practicality test analysis on field tests by students and biology teachers can be seen in Table 3.

Table 3. LKPD Based Practical Test Results (*Search, Solve, Create and Share*).

Practicality Test	Mark (%)	Category
Learners	92.00	Very Practical
Biology Teacher	96.00	Very Practical

Based on the results of the practicality of the students, an average value of 92.00% was obtained in the very practical category. 96.00% based on the results of a practical test by a biology teacher at SMA N 3 Padangsidempuan. These results indicate that LKPD based (*Search, Solve, Create and Share*) very practical to be used by students and teachers in carrying out the learning process.

In terms of attractiveness and convenience, all respondents agreed regarding the attractive appearance of LKPD, the ease of understanding language used in LKPD, and the ease of understanding the material using LKPD based (*Search, Solve, Create, and Share*). Matter is in accordance with the statement of Prastowo (2012), that an LKPD as an interesting teaching material for students and use language appropriate to the child's developmental level motivating to study hard and study smart. Other than that, the whole respondents stated that they agreed about writing, font, structure sentences, pictures and the presentation of writing and pictures in the appropriate LKPD with graphical criteria LKPD supported by statements (Apertha & Zulkardi, 2018), that the technical requirements of an LKPD emphasize LKPD presentation, namely in the form of writing, pictures, and appearance in LKPD. LKPD that meets the technical requirements can motivate students to study the material in LKPD independently.

Based on the observations made when carrying out the practicality test, it is clear that students are very happy and enthusiastic in learning using worksheets based (*Search, Solve, Create, and Share*). Coupled with the presence of students who think that LKPD based (*Search, Solve, Create, and Share*) is very interesting and easy to understand.

Conclusion

Based on the development that has been carried out, it is concluded that the LKPD based (Search, Solve, Create, and Share) that has been developed has validity in the very valid category based on the validator's assessment, and has practicality in the very practical category based on teacher and student assessments at SMA N 3 Padangsidimpuan .

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Auhor Contribution

Refni Syahleli: preparation of the original draft, results, discussion, methodology, conclusions; Syamsurizal, Irdawati and Violita: analysis and review; Muhamad Sholichin: Proofreading and editing.

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Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

References

- Apertha, P. K. F., & Zulkardi, Y. M. (2018). Development of LKPD Based on Open Ended Problems in Class VII Quadrilateral Material. *Journal of Mathematics Education*, 12(2), 47–62. <https://doi.org/10.22342/jpm.12.2.4318.47-62>
- Arikunto, S. (2021). *Dasar-Dasar Evaluasi Pendidikan Edisi 3*. Bumi Aksara.
- Aurilia Hakim, T., Marianti, A., & Widiyaningrum, P. (2020). Development of SSCS Based Material of Biological Diversity to Improve Critical Thinking Ability. *Journal of Innovative Science Education*, 9(2), 220 – 226. <https://doi.org/10.15294/jise.v8i3.34930>
- Djamaluddin, A. (2019). *Learning and Learning the 4 Pillars of Increasing Pedagogical Competence*. PT. Kaffah Learning Center.
- Fatimah, S. B., & Kurniawati, L. (2014). Problem Solving Learning Approach using Search, Solve, Create and Share (SSCS) Model and The Student's Mathematical Logical Thinking Skills. *Proceedings of International Conference on Research, Implementation and Education of Mathematics and Sciences*, 315–322. Retrieved from <https://repository.uinjkt.ac.id/dspace/handle/123456789/70422>
- Fitriani, Nurul, Gunawan, G., & Sutrio, S. (2017). Berpikir kreatif dalam fisika dengan pembelajaran conceptual understanding procedures (CUPS) berbantuan LKPD. *Journal of Physics and Technology Education*, 3(1), 24–33. <https://doi.org/10.29303/jpft.v3i1.319>
- Hakim, T. A., Marianti, A., & Widiyaningrum, P. (2020). Development of SSCS Based Material of Biological Diversity to Improve Critical Thinking Ability. *Journal of Innovative Science Education*, 9(2), 220–226. Retrieved from <https://journal.unnes.ac.id/sju/index.php/jise/article/view/34930>
- Ichsan, I. Z., Rahmayanti, H., Purwanto, A., Sigit, D. V, Singh, C. K. S., & Babu, R. U. M. (2020). HOTS-AEP-COVID-19: Students Knowledge and Digital Worksheet of ILMIZI Environmental Learning Model. *International Journal of Advanced Science and Technology (IJAST)*, 29(6), 5231–5241. Retrieved from <http://seresc.org/journals/index.php/IJAST/article/view/19581>
- Karsli, F., & Sahin, C. (2009). Developing Worksheet Based on Science Process Skills: Factors Affecting Solubility. *Asia-Pacific Forum on Science Learning and Teaching*, 10(1). Retrieved from <https://shorturl.asia/0hm7E>
- Kosasih, E. (2021). *Pengembangan bahan ajar*. Bumi Aksara.
- Kosilah, & Septian. (2020). Penerapan Model Pembelajaran Kooperatif Tipe Assure Dalam Meningkatkan Hasil Belajar Siswa. *Jurnal Inovasi Penelitian*, 1(6), 1139–1148. <https://doi.org/10.47492/jip.v1i6.214>
- Lestari, L., Alberida, H., & Rahmi, Y. (2018). The Validity and Practicality of Student Worksheets (LKPD) on Kingdom Plantae Material Based on a Scientific Approach for Class X SMA/MA Students. *EKSAKTA JOURNAL OF EDUCATION (JEP)*, 2(2), 170–177. <https://doi.org/10.24036/jep/vol2-iss2/245>
- Lufri, L., & Ardi. (2017). *Research Methodology: Qualitative Research, Classroom Action Research, and Descriptive Research*. United Nations Press.
- Maimun, M., & Bahtiar, B. (2022). The effect of search, solve, create, and share (SSCS) learning models assisted multimedia interactive to improve creative thinking ability and student learning outcomes. *Jurnal Penelitian Pendidikan IPA*, 8(4), 1834–1840. <https://doi.org/10.29303/jppipa.v8i4.1983>
- Misbah, M., Sasmita, F. D., Dinata, P. A. C., Deta, U. A., & Muhammad, N. (2021). The validity of

- introduction to nuclear physics e-module as a teaching material during the covid-19 pandemic. *IOP Conference Series: Earth and Environmental Science*.
<https://doi.org/10.1088/17426596/1796/1/012070>
- Munawaroh, I. H. (2022). Development Of E-LKPD Based On The SSCS (Search, Solve, Create, and Share) Model In Science Lessons For Class V Students In Elementary School. *Elementary School: Jurnal Pendidikan Dan Pembelajaran Ke-SD-An*, 9(2), 121-125. Retrieved from <https://es.upy.ac.id/index.php/es/article/download/2549/2094>
- Plomp, T., & Nieveen, N. (2014). Educational design research: Illustrative cases. Enschede: SLO. Netherlands Institute for Curriculum Development. [Http://International.Slo.Nl/Publications/Edr, 2](http://International.Slo.Nl/Publications/Edr,2). Retrieved from <https://slo.nl/publish/pages/4474/educational-design-research-part-a.pdf>
- Prastowo, A. (2012). *Creative Guide to Making Innovative Teaching Materials*. Yogyakarta: Diva Press.
- Prastowo, A. (2015). *Creative Guide to Making Innovative Teaching Materials*. Yogyakarta: Diva Press.
- Rafianti, I., Iskandar, K., & Haniyah, L. (2020). Search, Solve, Create and Share (SSCS) Learning to Improve Students' Understanding of Mathematical Concepts and Dispositions. *Journal Of Medives: Journal of Mathematics Education IKIP Veterans Semarang*, 4(1), 97-110. <https://doi.org/10.31331/medivesveteran>.
- Rini, Y. S. (2013). *Education: Nature, Purpose and Process*. Dance Arts Education. Yogyakarta State University.
- Sanchia, A. I., & Faizah, U. (2019). Pengembangan LKPD Berbasis Search, Solve, Create and Share (SSCS) untuk Melatih Keterampilan Proses Sains pada Materi Arthropoda Kelas X SMA. *Jurnal Riset Biologi Dan Aplikasinya*, 1(1), 9. <https://doi.org/10.26740/jrba.v1n1.p9-17>
- Sari, A. D., & Noer, S. H. (2017). Mathematical problem solving abilities with creative problem solving (CPs) models in learning mathematics. *Proceedings of the National Seminar on Mathematics and Mathematics Education*, 1(1), 245-252. Retrieved from <https://proceedings.radenintan.ac.id/index.php/pspm/article/view/47>
- Sholichin, M., Razak, A., Lufri, L., & Irdawati, I. (2022). Validitas dan Praktikalitas E-Modul Berbasis Mobile Learning Berbantuan 3D Page Flip Professional Pada Materi Ekologi dan Perubahan Lingkungan di Kelas X SMA. *Jurnal Penelitian Pendidikan IPA*, 8(6), 3034-3043. <https://doi.org/10.29303/jppipa.v8i6.2467>
- Sugiyono. (2019). *Metode Penelitian Dan Pengembangan, (Research and Development R&D)*. Bandung: Alfabeta.
- Tiara, T., Sukestiyarno, Y. L., & Mulyono, M. (2024). The Mathematical Problem-Solving Ability through the Search, Solve, Create and Share (SSCS) Learning Model. *Edunesia: Jurnal Ilmiah Pendidikan*, 5(1), 364-376. <https://doi.org/10.51276/edu.v5i1.720>
- Tsarapkina, J. M., Anisimova, A. V, Gadzhimetova, B. D., Kireychewa, A. M., & Mironov, A. G. (2021). The impact of digital education transformation on technical college teachers. *Journal of Physics: Conference Series*, 2001(1). <https://doi.org/10.1088/1742-6596/2001/1/012030>
- Utami, R. P. (2011). Pengaruh Model Pembelajaran Search Solve Create And Share (SSCS) dan Problem Based Instruction (PBI) Terhadap Prestasi Belajar dan Kreativitas Siswa. *Bioedukasi*, 4, 57-71. Retrieved from <https://jurnal.fkip.uns.ac.id/index.php/biologi/article/view/883>
- Yola, S. F., & Kurniawati, D. (2023). Development of Guided Discovery Learning Voltaic Cell E-LKPD for Class XII SMA/MA Students. *Journal of Educational Sciences*, 7(1), 110-121. <https://doi.org/10.31258/jes.7.1.p.110-121>
- Yulia, Y., & Kuswanto, H. (2023). Development of E-LKPD Based on Kvisoft Flipbook Maker to Improve Concept Understanding of Class X Students on Global Warming Materials Manuscript. *Jurnal Penelitian Pendidikan IPA*, 9(6), 4588-4595. <https://doi.org/10.29303/jppipa.v9i6.3529>