VANOS
JOURNAL OF MECHANICAL ENGINEERING EDUCATIOI
http;//jurnal.untirta.ac.id/index.php/vanos
ISSN 2528-2611, e-ISSN 2528-2700
Volume 7, Number 2, November 2022, Pages 118-129

Validation Instruments for the Development of Cooperative Module Based On Student Facilitator and Explaining Type in Courses Powertrain System

Rahma Doni[1], Wagino[2], M. Nasir[3], Wakhinuddin. S[4], Suhendar[5]

[1,2,3,4]Automotive Engineering Education, Engineering Faculty, Universitas Negeri Padang, Indonesia
Prof. Dr. Hamka Street, West Air Tawar, North Padang District, Padang City, Indonesia
[5]Electrical Engineering, Engineering Faculty, Universitas Sultan Ageng Tirtayasa, Indonesia
Raya Palka Street No.Km 3, Panancangan, Cipocok Jaya District, Serang, Banten, Indonesia

Corresponding author: rahma.doni@ft.unp.ac.id

Received: 25 August 2022. Accepted: 01 October 2022. Published: 30 November 2022

ABSTARCT

The lack of maximum understanding of students, especially on powertrain system subjects marked by low student learning outcomes, allegedly occurs because the available teaching materials have not been able to facilitate students to be able to learn independently and thoroughly and learning is still focused on educators as the main source of teaching materials. The main reason the researcher conducted this development research. This study aims to determine and test whether the module developed is valid or not to be used as teaching material in the powertrain system course. This development research uses a 4D model (Define, Design, Develop and Disseminate). The subjects of this study were students of Heavy Equipment Engineering at the Sawahlunto State Community Academy. The type of data is primary data where the data is provided by expert lecturers and students. The data collection instrument is in the form of a questionnaire. The data analysis technique used is descriptive data analysis technique, namely by describing the validity of the module based on this type of Student Facilitator and Explaining Cooperative. After doing the research, it was found that the cooperative module of the Student Facilitator and Explaining type was declared valid in the material aspect with a validity value of 85% and was declared valid in the format aspect with a validity value of 83%. Based on the findings of this study, it was concluded that the Student Facilitator And Explaining Cooperative-Based module was valid to be used as a learning medium in the Powertrain System course.

Keywords: Module, Student Facilitator and Explaining, Validity

INTRODUCTION

Learning is identical to one's activities consciously and intentionally [1]. Learning is a mental activity to get positive changes in behavior [2]. Learning is an activity to get new behavior changes as a whole, as a result of one's own experience and interaction with the environment [3]. Learning is basically a process of asking and answering [4] Learning is a psycho and physical activity that produces constant changes in knowledge, attitudes and skills [5]. Changes in a person expressed by mastering new patterns of welcome, in the form of understanding, skills and attitudes are another meaning of learning [6]. From some of the explanations above, it can be concluded that learning is a conscious and intentional activity that provides changes in a person in the form of positive behavior and stays relatively longer.

Learning is related to the interaction of students, educators and learning resources in the learning environment. Effective learning is able to make students able to get a wider and meaningful learning experience [7]. An effort that aims to improve and improve the learning process is the meaning of learning [8]. The learning process is a complex series of events, where there is a reciprocal relationship between students and teachers [9]. Learning has meaning as an effort to create educational interaction activities between two parties [10]. Learning is a series of processes of reciprocal relationships and evaluating learning outcomes to determine learning achievement in a certain period [11].

Learning outcomes and achievements are influenced by many factors, one of which is teaching materials, such as learning modules [12]. Teaching materials need to be used to bridge and integrate the experience and knowledge of students [13]. The role of the module in learning is very large, with the module students can train themselves, learn independently and can express how to learn according to the interests and abilities of each student [14]. The use of modules can lead to an independent learning process [15]. The learning module is a form of teaching material that is designed systematically, attractively so that it is easy to learn independently [16]. The self-study package consists of a series of learning experiences that are planned and systematically designed to increase the efficiency and effectiveness of learning in schools [17]. The application of a module also provides opportunities for students to work together with their peers [18].

A module needs to be developed by paying attention to certain procedures that are in accordance with learning objectives, clear content structures and meet the applicable criteria for learning development [19]. Modules are teaching materials with the characteristics of active learning and participation so that each individual has the opportunity to develop themselves even without the presence of educators, face-to-face meetings and the presence of schoolmates

[20]. Modules are printed teaching materials in independent learning with integrated topics that contain information needed by students to achieve and assess certain knowledge and abilities [21].

But the problem that occurs in the field is that the teacher does not have enough time to convey all the material topics to students, due to limited time and opportunities, especially when students are participating in industrial practice activities. This results in not all material being delivered completely and even deviating from what it should be. The module used still has some shortcomings [22]. Although the module has been used, its use is still like a book. Modules like this can rarely be used as student self-study materials, because they are seen by students as less attractive [23].

The head of the Heavy Equipment Engineering study program once provided information that the powertrain system course is one of the skills courses that students of the heavy equipment engineering study program must study. The learning process used in the powertrain system course is still centered on the lecturer as the only source of learning in the classroom (teacher centered). So that it does not involve students actively in learning.

The Head of Study Program also added that in D2 Heavy Equipment Engineering there are only learning tools that contain syllabus, lecture program units (SAP), teaching materials (Handout). This learning device has a weakness in learning, namely the learning device is only held by the lecturer in charge of the course, while students only get a few topics of discussion. This makes it difficult for students to study independently and only rely on explanations from lecturers and from internet services so that students' understanding of learning the powertrain system course is not optimal.

Based on the description of the problem above, it has an impact on the less than optimal value obtained by students. This is in accordance with the documentation of student learning outcomes in the powertrain system course in the 2017/2018 academic year which has not shown satisfactory results. Where from 24 students, 25.00% of students or as many as 6 students got a score of 80 and above, 20.83% of students or as many as 5 students got a score between 55-79 and 54.12% of students or about 13 students still got the value is below the minimum passing standard, so it can be concluded that more than 50% of students have an average score below the learning completeness value.

Some of the contributing factors are that the existing teaching materials have not been able to realize the opportunity for students to be able to learn independently, with the limitations of the teaching materials they have, the learning process is still focused on the teacher or educator as a source of information so that the dependence of students on the teacher causes students to be inactive in

learning. . And also communication between students is also reduced.

We should not allow the problems above because they will have a negative impact on the progress and quality of education for students. One way and solution that can be done by students is to innovate to change and develop learning media from the usual with the delivery of the lecture method into a model that is more interesting and has more components that accommodate students to be able to learn independently and better understand the material. learning that is delivered and combined with cooperative learning that requires students or students to play a more active role in the learning process.

Cooperative learning strategies can be used to achieve 3 learning objectives, namely: academic achievement, acceptance of individual differences and the development of social skills [24]. Various researches on cooperative learning provide consistent results that cooperative learning can increase achievement and create more positive interpersonal relationships than competitive and individualistic efforts. The success of this method, among others, is the result of research by Felder and Brent (1996) which states that this approach increases motivation, knowledge, understanding of the subject matter being taught [25]. So it can be understood that the cooperative learning model is learning that leads students to work together with other students in the form of small groups consisting of 4-6 people, so that the existence of these small groups provokes students to be able to exchange ideas and solve a problem. problems in the learning process together, with a process like this indirectly directs students to be more active and communicate with each other. There are six stages in cooperative learning, namely: Explaining the direction of learning and elaborating information, forming study groups, directing study groups and conducting assessments and awards [26].

Cooperative learning has many types and can be used by every educator in designing learning strategies according to the conditions and needs of students, one of which is student facilitator and explaining (SFAE) type cooperative learning. The use of the SFAE learning model is expected to increase students' ability and confidence in expressing opinions to other students in the class [27]. Users of the SFAE learning model facilitate each student in conveying ideas and ideas so that it helps students to better understand the material provided [28]. The activeness of students in expressing their ideas and ideas about teaching materials to other students is increasing with the use of SFAE learning model [29]

By using the SFAE approach in delivering teaching materials in class, students become more active in exploring broader knowledge about teaching materials that have been delivered by educators. By doing this every time you take part in classroom learning, it will add to the treasury of knowledge

possessed by students related to teaching materials received from educators in accordance with the planned goals. So that students are not only focused on the material presented by educators but also can explore from the internet and the modules provided and discuss and exchange ideas and ideas with other students.

Based on the advantages of the module and the background of the problems mentioned above, it raises the desire of researchers to carry out the Development of a Student Facilitator And Explaining Type of Cooperative Learning Module in the Transfer System Course, but in this journal only the validity instruments used in the learning module development process are discussed. based on cooperative learning, the type of student facilitator and explaining in the subject of the transfer system of the community academy of the State of Sawahlunto. This validity instrument is used to prove and test whether the module used is valid or not by using a questionnaire to be filled out by the material expert validator and the format related to the learning module to be developed.

RESEARCH METHOD

The development of this learning module is a type of development research. Development research is a research design that aims to develop and validate educational products [30]. This study aims to produce certain products and test their effectiveness [31].

In this development research, the researcher uses the 4-D model, this is because the 4-D model has procedures that are in accordance with the main problems that underlie this research and are arranged systematically. The 4-D model has 4 stages, namely; Define(Development of material), Design(Design),Development(Development), Disseminate (Disseminator). The 4 stages above are:

1. Define stage

This stage aims to determine the basic problems needed in development research. To determine the basic problem, several analyzes were carried out;

a. Front End

The implementation of this analysis is reviewed from the aspect of the curriculum and the availability of teaching materials on campus or at school.

b. Student Analysis

The application of this analysis with the aim of knowing the description of the characteristics of students who will be the subject of trials in this development research.

c. Concept analysis

The application of this analysis aims to identify the main concepts that will be taught and arrange them systematically, and form a concept map, the goal is to obtain a hierarchy of concepts to be studied.

d. Task Analysis

The application of this analysis is carried out with the aim of identifying the main skills that will be reviewed by researchers and analyzing them into additional skill sets that may be needed. This analysis ensures a review of all assignments in the learning material to be delivered. So at this stage the researcher must analyze the main tasks that must be mastered by students to achieve minimum competence.

2. Stage of Design (Design)

This stage is carried out with the aim of preparing a learning module development design, with the following steps:

a. Media Selection
b. Format Selection
c. Making Initial Plans

3. Development Stage (Develop)

This stage aims to produce a product that is valid, practical and effective. In this journal, it will only be discussed related to the validity of the module. Validation stage is the stage before the module is used. Modules are validated first by experts. This is intended to test the suitability between the format and the material created. The following are the names of experts who act as material and format validators.

Validation is done by filling out a validation questionnaire sheet by experts as validators. Input from the validator is used as material for guidelines in improving and revising the module to be developed. Validation is completed if the module is declared valid by experts and continues with research trials.

Table 1. List of validator

Validator	Position	Aspect validated
1	Lecturer of Automotive Engineering-UNP	Learning module material
2	Head of Heavy Equipment Engineering Study Program-AKS	Material and Format of learning modules
3	Coordinator of AK Sawahlunto	Learning Module Format

4. Stage of Dissemination (Disseminate)

After being validated and tested for practicality and effectiveness in a particular class, a valid, practical, and effective learning module is obtained. After that, it was disseminated on a limited scale. The research flow can be seen in the image below.

Table 2. Grid format validity and module material

No	Aspect	Rating Indicator
1	Module Format	a)Aspects of module format
		b) Language Aspect
2	Module Materia	a) Material quality aspect
		b)Aspects of learning quality

The subjects in this study were Diploma 2 students of Heavy Equipment Engineering, Akademi Komunitas Sawahlunto. While the type of data in this study was primary data, namely data obtained directly from the lecturer's validator taken through a validity testing questionnaire. The instrument used is a questionnaire, the grid used in making the validation questionnaire for this learning

module refers to the format and material of the module.

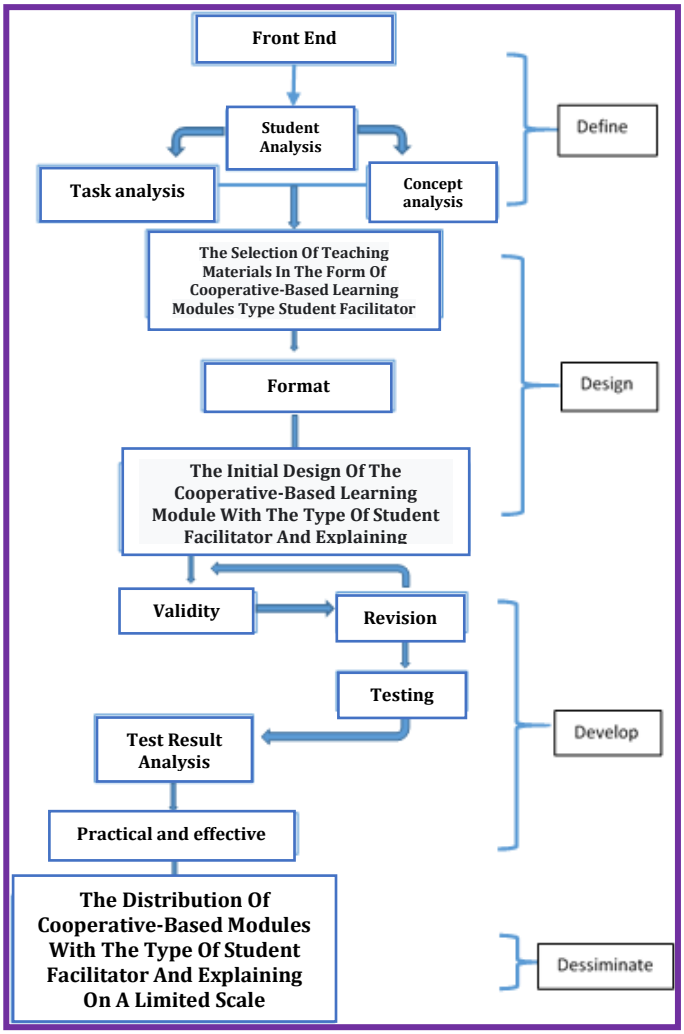

Figure 1. Research flowchart

The data from the validation of the cooperative-based learning module type Student Facilitator and Explaining the powertrain system courses in the form of material validation and format validation listed in tables 3 and 4 were analyzed with the following steps:

a. The validity questionnaire consists of 5 categories of answers, namely: 5 = Strongly Agree, 4 = Agree, 3 = Moderately Agree, 2 = Disagree, 1 = Strongly Disagree
b. Summing up the scores of each validator for all indicators
c. Entering statistical data into the Aiken's V formula as follows:

$$V = \sum s / [n (c - 1)]$$

Information:

S = r - lo

lo = Low Validity Score (in this case = 1)

c = The Highest Number Of Validity Assessments (in this case = 5)

r = Number given by validator

d. The results of Aiken's calculations range from 0 to 1, the number 0.6 can be interpreted as having a fairly high coefficient [32]. Then the V value of 0.6 and above is stated in the **valid category**.

RESULT AND DISCUSSION

In this development research, data collection on the validity of the learning module was carried out using a questionnaire (questionnaire). Questionnaires were given to 3 experts as validators who validated the module format developed. Aspects that are validated are aspects of format and aspects of language. Furthermore, the researchers also distributed questionnaires to 3 validators who validated the material contained in the developed module. Aspects that are validated are aspects of the quality of content and quality of learning.

The results of the assessment of each aspect given by the validator were analyzed

using the Aiken's V statistical formula. The results obtained were validation values for the development of the resulting product. The results of the validation recapitulation are summarized from the aspects of the assessed learning modules as shown in the table below.

Table 3. Results of expert validation of learning module materials

No	Validator	Evaluation	Category
1	Validator 1	0, 85	Valid
2	Validator 2	0, 86	Valid
3	Validator 3	0, 84	Valid
	Average	0, 85	Valid

The results obtained from the research on the development of learning modules based on Cooperative Learning Types of Student Facilitators in the Powertrain System Course that have been carried out using a 4-D model with the Define, Design stages. 85> 0.667 then the learning module is included in the Valid category. Furthermore, the validation of format experts can be seen in the following table:

Table 4. Expert Validation results of the learning module format

No	Validator	Evaluation	Category
1	Validator 1	0, 83	Valid
2	Validator 2	0, 83	Valid
3	Validator 3	0, 84	Valid
	Average	0, 83	Valid

The results of the analysis of the validity test to the learning module format experts obtained an average aspect of 0.83> 0.667 then the learning module was included in the Valid category.

CONCLUSION

The results obtained from the research on the development of learning modules based on Cooperative Learning Types of Student Facilitators in the Powertrain System Course have been carried out using a 4-D model with all stages of Define, Design, Develop and Disseminate given by each validator., i.e. validation value. the content/material is 0.85 with the "valid" category, the module format validation value is 0.83 with the "valid" category. So that it can be taken the average validation of the development of cooperative learning based learning modules for the Student Facilitator type in this Powertrain System course is 0.82. From these results it can be stated that the module is in the "Valid" category, thus the developed module can be used as teaching material for powertrain system courses. This is also in line with the results of the module development research conducted by Ramadahni Rahmatullah which was presented in an article entitled The Effectiveness of the Learning Module Cooperative Learning Student Facilitator and Explaining. , so that the learning module is included in the Valid category and the results of the analysis of the validity of the learning module format expert obtained an average aspect of 0.917 > 0.667, so the learning module is included in the Valid category [7].

Development research was also carried out by S. F. S. Sirate and R. Ramadhana, this research was related to the development of literacy skills-based mathematics learning modules. This development research refers to three quality requirements, namely valid, practical and effective as well as compiled and developed by adapting the development model of Romiszowski and 4-D. Romiszowski's model includes design, synthesis and evaluation supported by Thiagarajan known as 4-D, namely define, design, develop and disseminate. The results of the analysis of this development research indicate that based on the validity criteria, namely $3.5 \leq M \leq 4.0$ (with $M = \bar{X}$ find the validity of all aspects), then in terms of all aspects, the literacy skill-based mathematics learning module is declared to meet the validity requirements. This means that the developed module meets the criteria for a valid module [16].

Development research conducted by M. Khoirudin with the Research and Development method which aims to develop inquiry-based learning modules on the interaction material between living things and their environment. The research data was obtained by using a questionnaire. The results obtained from tests carried out by learning media experts who assessed the feasibility of the module design display showed a percentage of 84.84% so that the inquiry-based learning module development product did not need to be revised. Meanwhile, testing by material experts who assess the feasibility of the material in the developed module shows an assessment percentage of 88.47% so that the inquiry - based learning module development product does not need to be revised [23].

We can see from several previous studies on the development of teaching materials or modules with the research that the authors carried out both using research and development and also data collection techniques using observation methods and questionnaires. From the results of the validation of the module that the author developed, it is in the valid category so that the module is worthy of being used as one of the teaching materials in the learning process.

REFERENCES

[1] A. Pane and M. D. Dasopang, "BELAJAR DAN PEMBELAJARAN," vol. 03, no. 2, p. 20, 2017.

[2] M. A. Setiawan, *Belajar dan pembelajaran*. Uwais Inspirasi Indonesia, 2017. [Online]. Available: https://books.google.co.id/books?id=CPhqDwAAQBAJ&printsec=frontcover&hl=id

[3] M. Syaiful Rosyid, Mustajab, and A. Rosyid Abdullah, *Prestasi Belajar*. Batu: Literasi NUsantara, 2019. [Online]. Available: https://books.google.co.id/books?id=2tmaDwAAQBAJ&printsec=frontcover&hl=id

[4] D. Juliandri, "Penerapan Pendekatan Contextual Teaching And Learning (CTL) Untuk Meningkatkan Hasil Belajar

Statistika," *J. Penelit. Pendidik. MIPA*, vol. 1, no. 1, pp. 1–10, 2016.

[5] M. S. Hanafy, "Konsep belajar dan pembelajaran," *Lentera Pendidik. J. Ilmu Tarb. Dan Kegur.*, vol. 17, no. 1, pp. 66–79, 2014.

[6] M. Suardi, *Belajar dan Pembelajaran*. Yogyakarta: Deepublish, 2018.

[7] R. Rahmatullah, S. Syahril, and R. Abdullah, "The Effectiveness of the Learning Module Cooperative Learning Student Facilitator and Explaining," *J. Educ. Technol.*, vol. 5, no. 1, p. 123, Apr. 2021, doi: 10.23887/jet.v5i1.29954.

[8] W. D. Dwiyogo, "Pembelajaran visioner," Bumi Aksara, 2022.

[9] M. Sari, M. Habibi, and R. Putri, "Pengaruh model pembelajaran kooperatif tipe think-pairs-share dalam pembelajaran matematika terhadap kemampuan pemahaman konsep matematis dan pengembangan karakter siswa sma kota sungai penuh," *Edumatika J. Ris. Pendidik. Mat.*, vol. 1, no. 1, pp. 7–21, 2018.

[10] N. Kusuma, A. Mujib, E. Syahputra, and S. Ariswoyo, "Pengembangan Perangkat Pembelajaran Kooperatif Tipe Think Talk Write Untuk Meningkatkan Kemampuan Representasi Matematis Siswa," *Edumaspul J. Pendidik.*, vol. 4, no. 2, pp. 39–45, 2020.

[11] M. M. Zagoto, "Peningkatan Hasil Belajar Mahasiswa Melalui Implementasi Model Pembelajaran Kooperatif Word Square," *Educ. J. Pendidik.*, vol. 1, no. 1, pp. 1–7, 2022.

[12] S. M. Mukaromah, "Pengembangan Modul IPA Braille Berbasis Integrasi Islam dan Sains," *INKLUSI*, vol. 5, no. 2, p. 195, Sep. 2018, doi: 10.14421/ijds.050203.

[13] S. Aji, M. N. Hudha, and A. Rismawati, "Pengembangan modul pembelajaran fisika berbasis problem based learning untuk meningkatkan kemampuan pemecahan masalah fisika," *SEJ Sci. Educ. J.*, vol. 1, no. 1, pp. 36–51, 2017.

[14] H. H. Al Azka, R. D. Setyawati, and I. U. Albab, "Pengembangan Modul Pembelajaran," *Imajiner J. Mat. Dan Pendidik. Mat.*, vol. 1, no. 5, pp. 224–236, Oct. 2019, doi: 10.26877/imajiner.v1i5.4473.

[15] Y. P. Sukiminiandari, A. S. Budi, and Y. Supriyati, "Pengembangan modul pembelajaran fisika denganpendekatan saintifik," in *Prosiding seminar nasional fisika (e-journal)*, 2015, vol. 4, pp. SNF2015-II.

[16] S. F. S. Sirate and R. Ramadhana, "Pengembangan modul pembelajaran berbasis keterampilan literasi," *J. Inspiratif Pendidik.*, vol. 6, no. 2, pp. 316–335, 2017.

[17] M. W. Setiyadi, "Pengembangan Modul Pembelajaran Biologi Berbasis Pendekatan Saintifik Untuk Meningkatkan Hasil Belajar Siswa," *J. Educ. Sci. Technol. EST*, vol. 3, no. 2, p. 102, Aug. 2017, doi: 10.26858/est.v3i2.3468.

[18] D. H. S. Junaida and M. Pd, "Jurnal Pendidikan Bisnis dan Manajemen, Volume 2, Nomor 1, Juli 2016, Halaman 75 - 93," p. 19.

[19] E. Peniati, "Pengembangan modul mata kuliah strategi belajar mengajar IPA berbasis hasil penelitian pembelajaran," *J. Pendidik. IPA Indones.*, vol. 1, no. 1, 2012.

[20] L. Lasmiyati and I. Harta, "Pengembangan modul pembelajaran untuk meningkatkan pemahaman konsep dan minat SMP." Pythagoras: Jurnal Pendidikan Matematika, 2014. [Online]. Available: https://journal.uny.ac.id/index.php/pythagoras/article/view/9077/pdf

[21] T. Ekawati, "Pengembangan Modul Pembelajaran Matematika Pada Materi Statistika Terintegrasi Nilai-Nilai Keislaman," *AKSIOMA J. Program Studi Pendidik. Mat.*, vol. 8, no. 1, Jun. 2019, doi: 10.24127/ajpm.v8i1.1826.

[22] A. Rahmawati, "Pengembangan Modul Kimia Dasar Berbasis Multipel Level Representasi Untuk Meningkatkan Kemampuan Berpikir Kritis Mahasiswa," *Phenom. J. Pendidik. MIPA*, vol. 5, no. 2, pp. 5–18, Feb. 2016, doi: 10.21580/phen.2015.5.2.76.

[23] M. Khoirudin, "Pengembangan Modul Pembelajaran Ipa Biologi Berbasis Inkuiri Pada Materi Interaksi Antar Makhluk Hidup Dengan Lingkungannya," *BIOEDUKASI J. Pendidik. Biol.*, vol. 7, no. 2, Dec. 2016, doi: 10.24127/bioedukasi.v7i2.611.

[24] W. B. Sulfemi, "Model Pembelajaran Kooperatif Mind Mapping Berbantu Audio Visual Dalam Meningkatkan Minat, Motivasi Dan Hasil Belajar IPS," *J. PIPSI J. Pendidik. IPS Indones.*, vol. 4, no. 1, p. 13, Mar. 2019, doi: 10.26737/jpipsi.v4i1.1204.

[25] R. Manullang, M. F. Rahmadana, and A. E. Putriku, "Pengembangan Model Pembelajaran Berbasis Kooperatif," *NIAGAWAN*, vol. 6, no. 2, Oct. 2017, doi: 10.24114/niaga.v6i2.8337.

[26] H. Wijaya and A. Arismunandar, "Pengembangan Model Pembelajaran Kooperatif Tipe STAD Berbasis Media Sosial," *J. Jaffray*, vol. 16, no. 2, p. 175, Oct. 2018, doi: 10.25278/jj71.v16i2.302.

[27] A. Azis and A. Maftukhin, "Penerapan Model Pembelajaran Student Facilitator and Explaining untuk Meningkatkan Minat dan Motivasi Belajar Fisika Siswa Kelas X SMA Negeri 10 Purworejo Tahun Pelajaran 2013/2014," p. 4.

[28] D. Mulyono and A. Elly S., "Pengaruh Model Pembelajaran Reciprocal Teaching dan Student Facilitator and Explaining Terhadap Hasil Belajar Matematika dengan Mengontrol Kemampuan Awal Siswa," *J. Kependidikan J. Has. Penelit. Dan Kaji. Kepustakaan Bid. Pendidik. Pengajaran Dan Pembelajaran*, vol. 6, no. 2, p. 238, Jul. 2020, doi: 10.33394/jk.v6i2.2536.

[29] A. Saifuddin, "Penerapan Model Pembelajaran Student Facilitator And

Explaining (Sfe) Dengan Menggunakan Peta Konsep Untuk Meningkatkan Keaktifan Dan Prestasi Belajar Siswa Pada Mata Pelajaran Ekonomi Kelas X Lintas Minat Ekonomi Di Sma Negeri 02 Batu," vol. 8, p. 12, 2015.

[30] M. Ainin, "Penelitian Pengembangan," p. 16, 2013.

[31] B. Rahim, J. Adri, and S. Suparno, "Pengembangan Modul Pembelajaran Model Kooperatif Tipe Jigsaw Pada Mata Kuliah Tata Tulis Karya Ilmiah Dan Seminar Pada Pendidikan Vokasi," *J. Vokasi Mek. VoMek*, vol. 1, no. 2, pp. 39–48, Aug. 2019, doi: 10.24036/vomek.v1i2.64.

[32] S. Azwar, *Penyusunan Skala Psikologi.* Yogyakarta: Pustaka Belajar, 2012.