Schoology-based Training Module for Improving Teacher Competence in Making Classroom Action Research

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A B S T R A K

Guru sebagai garda terdepan dalam pembangunan kualitas pendidikan di Indonesia dinilai sebagian besar kalangan masih rendah. Penelitian ini bertujuan Mengembangkan modul peningkatan kompetensi guru membuat penelitian tindakan kelas menggunakan Schoology. Penelitian ini menggunakan model penelitian pengembangan Borg and Gall terintegrasi model ADDIE. Teknik pengumpulan data dengan wawancara, kuesioner, rubrik, pretes dan postes. Teknik analisis data menggunakan deskriptif persentase kategoris dan Uji Wilcoxon Signed Ranks Test. Hasil validasi ahli materi skor 84,17 %, ahli desain modul 85,57 %, dan ahli media pelatihan 89 %. Berdasarkan hasil validasi ahli, modul dinilai sangat layak digunakan. Pada ujicoba 16 guru, modul ini juga terbukti berhasil meningkatkan kemampuan guru dalam membuat Penelitian Tindakan Kelas yang ditunjukkan dengan peningkatan skor 30,9% dari pretes 49 % menjadi 79,9% dalam postes dengan perolehan nilai signifikansi dari uji wilcoxson sebesar 0,005 < 0,05, hal ini menunjukkan bahwa pengembangan modul menggunakan Schoology efektif untuk peningkatan kompetensi guru dalam membuat Penelitian Tindakan Kelas. Implikasi penelitian ini diharapkan melalui pengembangan modul ini dapat membantu guru dalam membuat PTK, sehingga dapat meningkatkan kompetensi guru.

A B S T R A C T

Teachers as the front line in the development of the quality of education in Indonesia are considered by most groups to be still low. This study aims to develop a teacher competency improvement module to make classroom action research using Schoology. This study uses the Borg and Gall development research model integrated with the ADDIE model. Data collection techniques with interviews, questionnaires, rubrics, pre-test and post-test. The data analysis technique used descriptive categorical percentages and the Wilcoxon Signed Ranks Test. The results of the validation of material experts scored 84.17%, module design experts 85.57%, and training media experts 89%. Based on the results of expert validation, the module is considered very feasible to use. In the 16-teacher trial, this module was also proven to be successful in improving the teacher's ability to make Classroom Action Research as indicated by an increase in the score of 30.9% from the pre-test 49% to 79.9% in the post-test with the acquisition of a significant value from the Wilcoxson test of 0.005 < 0, 05, this shows that the development of modules using Schoology is effective for improving teacher competence in making Classroom Action Research. This research implies that the development of this module can help teachers in making CAR so that they can improve teacher competence.

1. INTRODUCTION

Improving human resources through education is very important and fundamental to the development of a nation (Ekowati et al., 2020; Yudha, 2019). Indonesia cannot become a developed country if its human resources are weak, or if its people do not have adequate education and knowledge. However, teachers as the frontline in the development of the quality of education are considered by most people to be still low (Suryana & Fathurrohman, 2012). Given the strategic position and role of the teacher as the spearhead as well as the forefront of educational success, their existence must be supported by competence (Satriana et al., 2021; Wijayanti & Fauziah, 2020). One way that can be taken to increase the professionalism and competence of teachers can be realized if the teacher makes researches his performance and is willing

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to always upgrade his knowledge (Devi et al., 2022; Sumar, 2018; Susilawati, 2021). Competence can be interpreted as adequate abilities that need to be possessed by someone to carry out a certain task. Competence is the ability or capacity of a person to do various tasks in a job, and this ability is determined by two factors, namely intellectual ability and physical ability (Robbins Stephen P, 2007). By conducting classroom action research (CAR) in developing their profession, teachers will always be able to evaluate, reflect and provide solutions for solving problems encountered in class as a form of improving their profession as well as increasing student achievement. CAR is one of the efforts that can be made by teachers to improve the quality of teacher' roles and responsibilities, especially in managing learning.

Facts on the field show that teachers are faced with problems when they have to carry out self-development and conduct research in class. This is due to limited time, low motivation, and ignorance of teachers in making Classroom Action Research. The low motivation of teachers in conducting CAR is due to the ignorance of teachers in conducting research (Sadimin et al., 2017). Some of the obstacles faced by teachers in conducting Classroom Action Research include the lack of teacher competence in the field of classroom action research. Teachers' poor understanding of the benefits of classroom action research. Lack of Classroom Action Research products produced by teachers (Nilakusmawati et al., 2016). Most of the teachers in Cluster V, Karangasem sub-district, faced problems with promotion because they did not have scientific writing due to a lack of knowledge and skills in making CAR, limitations in writing scientific papers, limited reference sources, lack of basic theory, obstacles in finding research themes, methodological constraints as well as a lack of guidance from school principals, senior teachers or experts. In addition to this, the busyness of teaching causes a lack of time to conduct research, plus there is no funding provided for research, which is a major obstacle for teachers to fulfil their professional development, especially in conducting research. Teachers still experience problems designing and implementing CAR because of the limited ability of teachers and supervisors who come from Guide Teachers (Taufiq & Wiyanto, 2019). The obstacles experienced by teachers in writing Classroom Action Research proposals are the teacher's lack of knowledge regarding pedagogics or educational science, and the lack of skills to find scientific information (Pramudiyanti et al., 2021). The obstacles faced by teachers in carrying out individual assignments are busy at school and the lack of writing ability, therefore it is necessary to promote a writing culture (Miswar, 2020).

These constraints, indicate a lack of mastery of teacher competence, especially in carrying out CAR, which results in a lack of efforts to improve learning practices, educational services or the quality of school programs which results in less-than-optimal student learning outcomes and also impacts teachers' promotion and position. Training that has been conducted by the UPDT District. Wonosegoro-Boyolali which was followed by 114 teachers held in September-October 2014 only 20 teachers were able to produce scientific papers published in scientific journals (Giarti, 2014). Failure in training because teachers lack books or learning resources. Limited time for training due to busy teaching. Lack of teacher competence in writing scientific papers. Less effective training methods due to too many participants, short training time and space constraints. Even teachers who have written scientific papers face obstacles, namely, a lack of reference sources and time constraints to attend training. Based on the results of the questionnaire, the same obstacles in making CAR also occur in five junior high schools in Salatiga city which will be the object of research. The specific problems that occurred in these five junior high schools were as follows: of the 16 teachers to whom the researchers gave questionnaires, the results showed that 4 teachers had conducted CAR to completion (already produced products), 6 teachers had attended CAR training but did not finish it (had not produced a product) and 6 teachers had never received CAR training. Teachers who attended the training and did not complete it were due to the tight hours of teaching so the teacher had difficulty dividing the time to make CAR. Low motivation and ignorance of teachers in conducting CAR. Difficulties in collecting data, there is no ongoing guidance, so teachers need to obtain training modules on an ongoing basis that are practical and flexible in carrying out CAR activities to produce reports that are substantially and physically fit for publication.

The solution to overcome this problem is that the teacher continues to make CAR with the help of modules. Classroom Action Research (CAR) is an examination of learning activities in the form of an action, which is deliberately raised and occurs in a class simultaneously (Yastuti et al., 2021). CAR is a necessity for teachers to improve their professionalism of a teacher. CAR is very conducive to making teachers sensitive and responsive to the dynamics of learning in their classes. Teachers become reflective and critical of the learning in their classes. CAR can improve teacher performance so that they become professional. The teacher is no longer a practitioner, who is satisfied with what has been done for years without any attempts at improvement and innovation, but also a researcher in his field. The application of CAR in education and learning has the objective of improving and/or improving the quality of learning practices on an ongoing basis to improve quality, develop teacher skills, and foster a research culture in the community (View, 2019). This module is created in the Schoology Learning Management System (LSM) and can be accessed

using PCs, laptops and smartphones that are connected to the internet network. Schoology is a learning management system (LMS) website for schools, higher education institutions and enterprises that enables the creation, management and sharing of content. Schoology was designed by Jeremhy Friedman, Ryang Hwang and the Trinidad Team in 2007. Schoology is a website that combines e-learning and social networking (Aminoto & Pathoni, 2014).

Previous research findings stated that STEM-based Schoology e-learning media on static fluid material is very feasible and appropriate to be used as a learning medium (Warsito et al., 2019). The use of Schoology in e-learning can optimize digital literacy skills (Sefriani & Sepriana, 2020). LMS Schoology has the advantage of being able to access training materials online, collaborating with other training participants and being able to study independently via mobile devices or PCs which can be done whenever and wherever they want (Supratman & Purwaningtias, 2018). Based on the description above, the conditions that occur in five schools in the city of Salatiga currently require efforts to help teachers make CAR. The purpose of this research is to create a training module for increasing teacher competence in making CAR using Schoology.

2. METHOD

The training module product development model used the Analysis, Design, Development, Implementation, Evaluation (ADDIE) Model developed by Reiser and Mollenda that emerged in the 1990s. ADDIE is one of the guidelines for creating an effective and dynamic training program device. The basic principle of learning design development using the ADDIE model is that all planned learning activities focus on guiding trainees in building their knowledge. In this study, researchers used 5 (five) steps of ADDIE model development that integrated the research and development steps developed by Borg and Gall, namely research and data collection, Planning, Product draft development, initial field trials, revising test results, field trials, product refinement field trial results, field implementation tests, final product refinement, and dissemination and implementation. Based on this description, the researchers took steps to develop the product using the ADDIE model with the steps of *analysis, design, development, implementation, and evaluation*. The resulting research product is a CAR training module using Schoology which is equipped with the syllabus, guide for trainers and guide for trainees. Data collection using test and non-test techniques. Test techniques are used to measure the competence of training results. Non-test techniques to measure the level of quality of the training process. Data sources in this study were respondents from 5 principals and 5 teachers. Data validation techniques use triangulation sources by comparing data and information from interviews of 5 principals and 5 junior high school teachers in the city of salatiga triangulation techniques are intended to check the data with different techniques by comparing the results of interviews, questionnaires, pre-test and post-test. Data were analyzed using descriptive categorical percentages and Wilcoxon Signed Ranks Test. This technique is used to determine the increase in competence achieved by teachers after participating in training activities and the statistical significance of the effectiveness of training modules.

3. RESULT AND DISCUSSION

Result

Development of training modules for increasing teacher competence in conducting classroom action research using *Schoology* with development steps according to the ADDIE development model. First analysis phase (Analyze), In this analysis stage, it was known from the questionnaires given that out of the 16 teachers who the researchers gave the questionnaires, the results showed that 6 teachers had never received CAR training, 4 teachers had conducted CAR to completion (has produced products), and 6 teachers had attended CAR training but not until it's finished (has not produced a product). Teachers who attended the training and did not complete it were due to the tight hours of teaching so that the teacher had difficulty dividing the time to make CAR. Low motivation and ignorance of teachers in conducting CAR. Difficulties in collecting data, there is no ongoing guidance, so teachers need to obtain training modules on an ongoing basis in carrying out CAR activities in order to produce reports that are substantially and physically fit for publication. The training that has been carried out by the UPTD District, Wonosegoro-Boyolali which was attended by 114 teachers held in September - October 2014 only 20 teachers were able to produce scientific papers published in scientific journals (Giarti, 2014).

The training participants included 16 teachers from 5 junior high schools in Salatiga city, namely Eben Haezer Christian 2 junior high school, Satya Wacana Christian junior high school, Pangudi Luhur junior high school, Anak Terang junior high school, Sunan Giri junior high school. Almost all trainees didn't experience any problems in operating the training modules using Schoology. The potential of the 16

teachers who attended the training is the willingness to learn and the ability to operate IT training modules. To improve the Professional of a teacher, making CAR is a necessity. The application of CAR in education and learning aims to improve and or improve the quality of learning practices on an ongoing basis to improve quality, develop teacher skills, and foster a culture of research in the teacher community. During this time there is a gap in the practice of teachers making CAR where dense teaching hours, low motivation and ignorance of teachers in doing CAR and no ongoing guidance so some teachers do not do CAR. Based on these potentials and problems, practical and flexible CAR training efforts are needed for junior high school teachers based on their needs, to improve their competence in making CAR using Schoology. At this stage, an analysis of the material needs of the trainees was carried out with measures to measure the ability of the trainees. Comparing participants'abilities with training modules using Schoology. Establishing skill ability gaps.

The second stage of design (Design), the design stage includes the creation of CAR training modules using *Schoology* to improve the ability of teachers in conducting CAR equipped with syllabus and training scenarios, guidance for trainers, guidance for trainees, as well as the *Schoology* portal. Modules are made based on *Learning Management System (LMS) Schoology* and can be accessed using a PCs, Laptop and Smartphone connected to the internet network. LMS *Schoology* has several advantages to being able to access training materials online, collaborate with other trainees and can learn independently through a mobile device or PC which can be done whenever and wherever they want. *Schoology* has easy-to-use features (almost similar to *facebook*). The *add file/link/ external tool* feature makes it easy for trainers and training participants to *upload* images and videos, equipped with video materials, with the help of audio-visual training participants it will be easier to remember and understand the training module material. Schoology's *discussion* and *message* features make it easy for trainees to communicate with trainers and collaborate with other training participants. *Assessment* and *assignment* features are equipped with *feedback* facilities to facilitate two-way communication between training participants and coaches and vice versa. Provides facilities to manage the Value (*grade*) quiz results or other activities through the *gradebook*. The availability of *attendance* to check the attendance of training participants.

The third stage of development (Development), this stage is the initial product development stage based on hypothetical products, namely the creation of CAR training modules using *Schoology* to improve teachers' abilities in conducting CAR. The initial model of the training module for improving the ability of teachers to conduct CAR using *Schoology* that has been developed is then carried out by an assessment or validation test of experts and users. The assessment was carried out by material experts, training module design experts and training media experts. The results of the assessment of the module experts are summarized in Table 1.

Table1. Expert Validation Results

NO	Validation	Total score	Percentage
1	Material expert	50.5	84.17 %
2	Design expert	36.5	85.57 %
3	Media specialist training	30,1	89 %

Table 1 provides information that the percentage of expert assessment of CAR training module material is 84.17%, based on the category and criteria for the expert test, this percentage data shows that the results of the expert assessment are in the very high category. This means that the CAR training module material as a product of the CAR training module using *Schoology* is feasible and ready to be tried out. In addition to providing an assessment of the quality of the training materials, the CAR training module material experts also provide the following suggestions for improvement: (1) The material is examined again by looking at examples of Education and Training guidelines, (2) Making media more meaningful and practical, (3) Some corrections in writing (typos) fixed. The results of the training module design expert's assessment of the syllabus as shown in Table 1 provide information that the percentage of the training module design expert's assessment was 85.57%. The findings of this data imply that the syllabus design and online training scenarios as a product of designing CAR training modules using S*choology* are ready to be tested in the field. The results of the evaluation of training media experts were 89%, which could be interpreted that the media as a product of the activities of designing CAR training modules using *Schoology* was ready to be tested in the field. This validation is needed to determine the feasibility of the product, this is in line with the research conducted (Afwah, 2020), (Sari et al., 2021) and (Delviana et al., 2021).

The four initial field tests (Implementation), this stage is a trial of a training module for improving teacher abilities in conducting CAR using Schoology. This field test aims to determine whether the use of the module has been effective (Wirganata et al., 2019). At the initial field test stage, the module was divided into 8 sections consisting of: 1) Module 1: Basic Concepts of CAR, 2) Module 2: Determining the CAR Title,

3) Module 3: Preparing CAR Proposals CHAPTER I, 4) Module 4: Preparing Proposals CAR CHAPTER II, 5) Module 5: Preparing CAR Proposals CHAPTER III, 6) Module 6: Preparing CAR Proposals, 7) Module 7: Implementing CAR, and 8) Module 8: Preparing CAR Reports. The main view of the CAR training portal consists of a home page display followed by a module page that contains material pages. Each material page contains document material sheets, pretests, worksheets, competency test sheets (post-tests), and discussion rooms. The display of the training module is presented in Figure 1 and Figure 2.
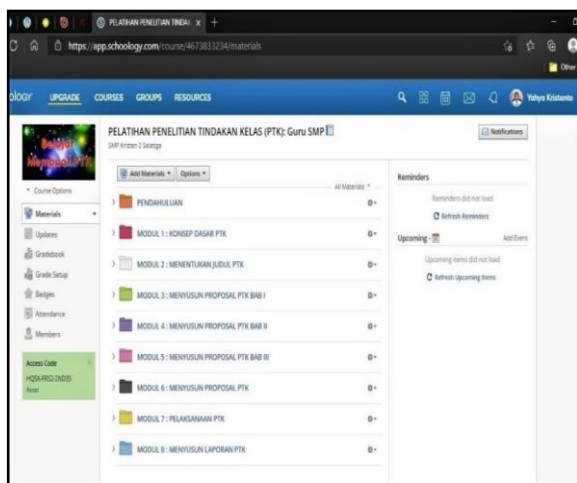

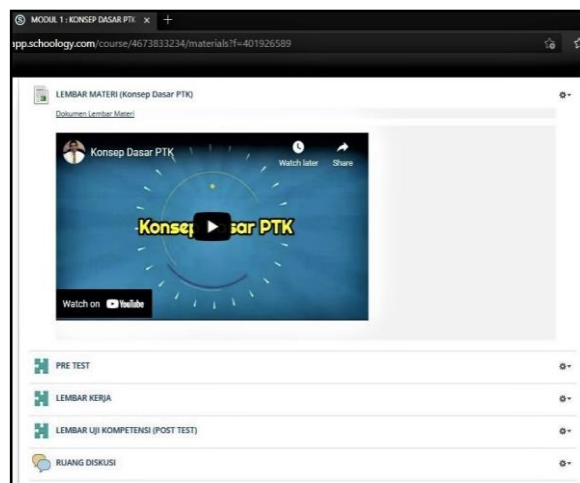**Figure1.** Initial Display of the Training Module

Figure 2. Module Page Display

The Fifth Revision of the Final Product (Evaluation), after the product trials have been carried out, the researcher revises the product based on the results of the product trials. Data on the responses of training participants to the quality of *online* CAR training for all aspects were in the good and very good categories presented in Table 2.

Table 2. Responses of Training Participants to CAR Training using *Schoology* in Field Test

No	Aspects to be Responded	Feedback from Training Participants									
		st B	%	Q B	%	K B	%	B	%	S B	%
1.	Appearance	0	0	0	0	1	6,2	8	50	7	43,8
2.	Access	0	0	0	0	1	4,2	6	37.5	9	58,3
3.	Interaction	0	0	0	0	0	0	6	37.5	10	62.5
4.	Learning materials	0	0	0	0	1	4,9	9	59	6	36,1
5.	Navigation controls	0	0	0	0	1	8,3	6	39,6	8	52,1

The average results from modules 1 to 8 were obtained by trainees in activities with an increase in score of 30.9% from the pre-test of 49% to 79.9% this score shows that the understanding of the trainees after using the module is included in the very good category, meaning that the teacher competency improvement module in making CAR using *Schoology* really helps trainees make CAR.

Statistical test using the Wilcoxon Signed Ranks Test. Statistical Test Results of Respondents' Understanding of the Basic Concepts of CAR showed a significance value of 0.002 <0.05. This means that there are differences in the level of respondents' understanding of the basic concepts of CAR before and after attending the training. Results of Statistical Test of Teacher Competence in Determining the Title of CAR The results of the statistical test of the ability of respondents to determine the title of CAR showed a significance value of 0.017 <0.05. This means that there are differences in the level of ability of respondents in determining the title of CAR before and after attending the training. The results of statistical tests on the ability of respondents to prepare CAR Chapter I proposals showed a significance value of 0.001 <0.05. This means that there are differences in the level of ability of respondents in preparing CAR Chapter I proposals, before and after attending the training. The results of statistical tests on the ability of respondents to prepare CAR Chapter II proposals showed a significance value of 0.000 <0.05. This means that there are differences in the level of ability of respondents in preparing CAR Chapter II proposals, before and after attending the training. The results of statistical tests on the ability of respondents to prepare CAR Chapter

III proposals showed a significance value of 0.001 <0.05. This means that there are differences in the level of ability of respondents in preparing CAR Chapter III proposals, before and after attending the training.

The results of statistical tests on the ability of respondents to prepare/formulate CAR proposals show a significance value of 0.000 <0.05. This means that there are differences in the level of ability of respondents in compiling/composing CAR proposals, before and after attending the training. The results of statistical tests on the ability of respondents to carry out CAR showed a significance value of 0.001 <0.05. This means that there are differences in the level of ability of respondents in carrying out CAR, before and after attending the training. The results of statistical tests on the ability of respondents to prepare reports show a significance value of 0.001 <0.05. This means that there are differences in the level of ability of respondents in compiling CAR reports, before and after attending the training. With the acquisition of a significance value from the Wilcoxson test of 0.005 <0.05, after using the training module the teacher competency improvement using Schoology is higher than before using the training module, meaning that the teacher's competence in making CAR is higher than before the training. This shows that module development using Schoology is effective for increasing teacher competence in making CAR. This is in line with research (Suparman & Paiki, 2019) which states that the level of satisfaction of trainees using schoology is very high, where 92% are satisfied with the training process, both in terms of material, delivery of material, discussion process, individual training and research results. Trainees understand the knowledge of LMS as well as apply learning, organize classes, and manage classes online with the Schoology platform (Purnawan et al., 2021).

Discussion

Module development using Schoology is effective for increasing teacher competence in making CAR. The development of E-training modules can improve teachers' ICT competencies (Wijaya & Iriani, 2020). The use of e-modules attracts students' interest in learning and gives a positive value to the use of smartphones (Diantari et al., 2018; Ismi, 2019). Modules are learning tools whose contents include materials, methods, activity instructions, exercises and evaluation methods that are arranged interestingly and systematically to achieve the expected goals and can be carried out independently (Dewi & Lestari, 2020; Susanti & Sholihah, 2021; Tjiptiany et al., 2016). Development of training modules for increasing teacher competence in making CAR using Schoology which is made to assist teachers in making CAR independently, practically and flexibly. One of the flexible teaching materials is E-Module. Because teaching materials in the form of E-Modules can be studied by trainees both at school and at home independently. E-module is a form of independent learning media arranged in digital form where this aims as an effort to realize the learning competencies to be achieved as well as to make students more interactive by using the application (Firman et al., 2018; Rahmi, 2019). There are eight main components that need to be contained in the module, so the teacher competency improvement module in making CAR using Schoology is equipped with an introduction, competency standards, basic competencies, table of contents, study time, information sheets, training participant guide sheets, pretest questions, material in video format and pdf, worksheets, assignments, and post-test questions.

The Schoology Learning Management System (LMS) used in the CAR module has several advantages. The advantages of LMS Schoology include being able to access training materials online, collaborating with other training participants and being able to study independently via mobile devices or PCs which can be done whenever and wherever they want. Schoology has features that are easy to use (almost similar to Facebook). The add file/link/external tool feature makes it easy for trainers and trainees to upload images and videos. Equipped with video material, with audio-visual assistance it can reach the learning styles of all training participants so that it will be easier for training participants to remember and understand the training module material. The discussion and message features in Schoology make it easier for training participants to communicate with trainers and collaborate with other training participants. The assessment and assignment features are equipped with feedback facilities to facilitate two-way communication between the trainees and the trainer and vice versa. Provides facilities to manage the value (*grade*) quiz results or other activities through the gradebook. The availability of *attendance* to check the attendance of the training participants. Schoology also has the advantage of the availability of converting gradebook files with csv extension to xls. Schoology has the advantage of being easy for students to use for independent or group learning, helping students in doing assignments online (Latifah & Utami, 2019; Wahyudi, 2017). Schoology can make the interest and motivation of students and teachers to learn more interesting and more increased because of the features possessed (Supratman & Purwaningtias, 2018; Tigowati et al., 2017). Schoology has interesting learning features such as, *groups, resources, courses, quizzes and presence* (Suchaina, 2018).

The initial model of the training module for increasing teacher competence in carrying out CAR using Schoology that has been developed is then carried out by an assessment or validation test of experts

and users. The assessment was carried out by CAR training module design and material experts as well as training media experts. Material validation and training module design aim to get input from material experts so that it can be used as improvement material so that the resulting validity can reach standards (Pratiwi et al., 2017). Product training modules for increasing teacher competence in conducting CAR using Schoology were validated using closed and open questionnaire instruments. The CAR training module material as a product of the CAR training module using Schoology is feasible and ready to be tried out. The CAR training module material experts, apart from providing an assessment of the quality of the training materials, also provide suggestions for improving the material by looking at examples of training guidelines. Making media more meaningful and practical. Some corrections in writing (typos) were fixed. CAR training media uses Schoology which has been installed on the web portal address *http://bit.ly/ready to learnCAR* validated using a closed questionnaire combined with an open questionnaire to provide suggestions and recommendations for improvement. Media Schoology as one of the E-learning training for teachers, which has adequate internet facilities increases teacher awareness and willingness to conduct research (Putri et al., 2020; Rosy et al., 2018). The *E-learning* Schoology application can increase teacher awareness and willingness to apply interactive training media in schools (Garad et al., 2021; Savitri et al., 2021). In line with the results of the study (Rezeki et al., 2021) shows that the application of Schoology-based e-module media improves students' understanding of concepts compared to conventional models. Schoology-based e-modules are declared feasible, practical, and effective as teaching materials (Gede & Widharma, 2021).

In terms of appearance, the CAR training module shows Schoology URL addresses, background images and colours, videos and content, font sizes and image layouts are very good. An attractive display of learning media can motivate students in learning, and communicative language can make it easier for students to understand the learning material (Sudarma et al., 2015). The developed web-based learning media is proven to be valid, practical and able to motivate students in learning (Aditya, 2018). On the aspect of access; ease of accessing online training, ease of operating training programs using Schoology, and the language used is very good. The ease of using the E-module will provide students with convenience in accessing teaching materials independently (Diantari et al., 2018). Message facilities, discussion forums, systematic topics to be studied, facilities for conveying teacher responses to assignments given by trainers, feedback features on assessments, and features for knowing grade/learning progress are very good. The e-module meets interactive criteria because it provides facilities for students to gain knowledge through exposure to the material, videos, animations and feedback provided by the e-module independently (Firman et al., 2018; Sadimin et al., 2017; Winatha, 2018).

Aspects of the training material design, the training design fosters the learning motivation of the trainees, the training objectives to be achieved are clear, the tasks lead to the training objectives, the design encourages the active learning of the trainees, the linkage of the material with the participants' abilities, the design of the training materials with time flexibility, the quiz design is randomized so that fostering the honesty of the trainees is very good. There are several reasons for achieving very good validity, as follows. First, based on the formulation of training objectives. The objectives of the training have been adapted to the reference for making CAR and developed based on the competencies that must be mastered by the trainees. The formulation of the training objectives then influences the extent or not of the discussion of the material to be delivered. The assessment used has also been adapted to the formulation of indicators. Second, based on the message delivery strategy. E-modules can trigger student interest and involvement in learning because they are designed attractively and simply. The delivery of material does not only rely on text aspects but is also supported by multimedia components such as images, graphics, videos and animations. Multimedia provides many options for creative learning, facilitating the learning process by delivering more interactive material and increasing interaction between students and teachers The delivery of material does not only rely on text aspects but is also supported by multimedia components such as images, graphics, videos and animations. Multimedia provides many options for creative learning, facilitating the learning process by delivering more interactive material and increasing interaction between students and teachers The delivery of material does not only rely on text aspects but is also supported by multimedia components such as images, graphics, videos and animations. Multimedia provides many options for creative learning, facilitating the learning process by delivering more interactive material and increasing interaction between students and teachers (Budoya et al., 2019; Okta Priantini & Widiastuti, 2021; Solihudin JH, 2018).The control aspect, navigation panel to access materials, navigation panel to assignments, and navigation panel to access quizzes are very good and easy to use. Simple and easy-to-remember interactive e-module navigation design that makes it easier for users, namely trainees, to access all material. The e-module is interactive so that it makes it easier to navigate and can display images, text and videos that are equipped with tests and provide feedback automatically (Diantari et al., 2018).

This finding is strengthened by previous findings which stated the use of Schoology is interesting and useful for teachers and is suitable for application to students in the teaching and learning process as an

online learning medium (Irmayana & Akhriana, 2018). Users of the e-learning Schoology application should continue to develop content so that learning is more interesting, innovative and interactive (Salim et al., 2020). The development of e-modules in thematic learning is feasible and can be used during the learning process (Diputra, 2016;Mahardika et al., 2021). E-module products in thematic learning have high quality or are suitable for use in learning (Violadini & Mustika, 2021). Presentation with Schoology can increase teacher competency (Arsini, 2018). The implementation of the training using Schoology has gone well, there were no significant obstacles, the participants also looked very enthusiastic and diligent in participating in the training from the beginning to the end of the activity (Suyasa et al., 2020). Schoology can be used to improve the competence of mathematics teacher training participants (Salim et al., 2020; Thohari, 2019). Training modules can increase the effectiveness of training activities to increase the competency of the trainees (Herminayu & Sulasmono, 2020). Training on the use of Schoology provides added value to teachers' knowledge and produces e-learning-based learning products that can be implemented easily and can also be accessed anytime and anywhere. The implications of this research are hoped that the development of this module it can assist teachers in making CAR, to increase teacher competence.

4. CONCLUSION

This development research produced a training module for increasing teacher competence in making CAR using Schoology. This module can be used for training to increase teacher competence in making CAR. Teacher competence in making CAR is higher than before the training. This shows that module development using Schoology is effective for increasing teacher competence in making CAR. It is recommended to use the teacher competency improvement training module in making CAR using Schoology, because this module is effective in increasing teacher competency in making CAR independently and the module can also be accessed without being limited by space and time.

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