

Developing the Textbook of Classroom Action Research Through Participatory Action Research: Quality and Challenges

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Abstract: Developing the Textbook of Classroom Action Research through Participatory Action Research: Quality and Challenges. Objective: This study collaboratively developed a Classroom Action Research (CAR) textbook and formatively evaluated its quality. **Method:** Using Participatory Action Research (PAR), this study collaborated with 29 teachers in Aceh to design, develop, and iteratively evaluate the textbook. During the design and development process, we formatively evaluated it through self-reflection, expert appraisal, questionnaires, and interviews to produce quality textbooks in terms of validity and practicality. **Findings:** Results showed that although most teachers initially did not understand CAR, there was an increase in their understanding and interest in implementing CAR with the textbook guidelines. Besides, the textbook's validity and practicality increased as expressed by the teachers. **Conclusion:** Using PAR in writing CAR with the teacher improves the quality of the textbook, in terms of its validity and practicality.

Keywords: teachers' involvement, participatory action research (PAR), textbook quality.

Abstrak: Pengembangan Buku Teks Penelitian Tindakan Kelas melalui Penelitian Tindakan Partisipatif: Kualitas dan Tantangan. Tujuan: Penelitian ini secara kolaboratif mengembangkan buku teks Penelitian Tindakan Kelas (PTK) dan mengevaluasi kualitasnya secara formatif. **Metode:** Menggunakan Penelitian Tindakan Partisipatif (PAR), penelitian ini bekerja sama dengan 29 guru di Aceh untuk merancang, mengembangkan, dan mengevaluasi buku teks secara berulang. Selama proses desain dan pengembangan, kami mengevaluasi buku tersebut secara formatif melalui refleksi diri, penilaian ahli, kuesioner, dan wawancara untuk menghasilkan produk yang berkualitas dari segi validitas dan kepraktisan. **Temuan:** Hasil penelitian menunjukkan bahwa meskipun sebagian besar guru pada awalnya tidak memahami PTK, terjadi peningkatan pemahaman dan minat mereka dalam menerapkan PTK dengan pedoman buku teks. Selain itu, validitas dan kepraktisan buku teks meningkat sebagaimana dirasakan para guru. **Kesimpulan:** Menggunakan PAR dalam menulis PTK dengan guru meningkatkan kualitas buku teks, dari segi validitas dan kepraktisannya.

Kata kunci: keterlibatan guru, penelitian tindakan partisipatif (PAR), kualitas buku teks.

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■ INTRODUCTION

Teachers' professionalism has received significant attention in research worldwide because it strongly determines education quality. Teachers' competence can warrant implementing the curriculum, as the curriculum implementation is only effective and sustainable if teachers take responsibility for it (Nieveen & Kuiper, 2012). Their competence also influences student learning satisfaction (Kangas, Siklander, Randolph, & Ruokamo, 2017). Therefore, teachers must always improve their professionalism in various ways, such as through action research. As Stenhouse (1975, as cited in Morales, 2016) states, it is not only the work of teachers that needs researching but also the teachers themselves must research their own work. The teacher also knows better about the classroom problems. Hence, Classroom Action Research (CAR) is considered relevant to support teachers in solving their classroom problems. And Indonesia's government has strongly motivated teachers to do CAR at school levels to increase their professionalism, as stipulated in the Permeneg PAN & RB no.16 of 2009 concerning Sustainable Professional Development (Sukidjo, 2014).

Literature indicates that CAR is the research developed with many models, such as the model developed by Kemmis and Taggart (1988). However, initially, it was developed by Kurt Lewin (Adelman, 1993). In CAR research, it is vital to study the problems faced and the relevant actions that help solve these problems (Creswell, 2014). Through CAR it can also help individual and professional development (Oja & Smulyan, 1989). CAR application's success is often measured based on the changes in the participants' lives (Fassinger & Morrow, 2013). Hence, the efficacy of teachers in conducting CAR in solving their classroom problems will in turn improve students' learning.

To learn and implement CAR, teachers can refer to many textbooks or other learning resources about writing in the market and online. However, various problems can occur with textbooks or online sources not developed based on research in school settings. First, many textbooks are written by freelance writers for commercial needs, not designed based on teachers or lecturers' experiences who are potential users and policymakers' expectations, such as the education office. As a result, there is a gap between the expectations and the content of the book. Second, the complexity of some textbooks' content is erratic, so that teachers or students are lazy to read or use them. Textbooks that are too high in complexity do not increase learning autonomy (Moiseenko, 2015). These problems can be the cause of the teachers' lack of autonomy in learning CAR, so they ask other people to write it for them.

Therefore, it needs to avoid these problems by developing the CAR textbook with potential users, called Participatory Action Research (PAR), in which teachers are the core stakeholders (Voogt, Pieters & Roblin, 2019). By participating in the process, they experience and gain direct knowledge about the process to make it easier to use the product. According to Cocking, Mestre, and Brown (2000, as cited in Al-Qatawneh & Al Rawashdeh, 2019, p. 91), "Textbooks are among the most widely used learning support materials and provide high-quality factors for a successful implementation of educational reform in any country." Moreover, PAR is a research methodology that requires action and outcomes simultaneously, and focusing is on improving quality and improving people's competence experiencing problems, such as teachers with their CAR (Learning for Sustainability, 2018). Several studies (such as Handoyo, 2015; Stewart, 2010) have proven that PAR's use can increase the attractiveness or

interest in the textbooks, and people who are involved learn a lot about the theory used and become easier to understand and use the textbook. According to Handoyo (2015), the textbook's practicality can be reached because PAR allows for negotiation and collaboration of the parties involved in the design and development of a learning book.

This research attempted to design and develop a CAR textbook using Participatory Action Research (PAR). In PAR, all prospective users, from lecturers, teachers, and students, need to evaluate it and take appropriate corrective action informatively. In this way, they can collaboratively develop a textbook with quality criteria, including validity, practicality, and effectiveness (Thijs & van den Akker, 2009). The three criteria are used to assess various curriculum representations levels, from the ideal level, formal level, perceived level, operational level, experiential level, to the attained level. Validity is intended to assess curriculum products at ideal and formal levels. Practicality is at the perceived and operational level, and effectiveness is at the experience and learning level.

According to Thijs and Akker (2009), for validity, it needs to evaluate whether the curriculum product is valid in terms of what is intended and what is written. Validity is divided into content and construct validity. With content validity, it is necessary to see whether the curriculum has essential components (e.g., objectives, learning materials, learning activities, evaluation), and construct validity is about whether curriculum components are consistently linked to one another. Practicality is about whether the curriculum is practical when used in the teaching and learning process. Users or curriculum implementers can understand this. Moreover, the last one is effectiveness, which assesses whether the curriculum is effective for use in learning as experienced by students. All

findings resulting from the three criteria will be taken into account in revising the curriculum product.

However, this research only focuses on the first two criteria: How does the use of participatory action research positively affect the validity and practicality of the CAR textbook? What are the challenges of collaboration with teachers in developing the CAR textbook?

■ METHODS

Research design

This study combines Participatory Action Research (PAR) with design research. Grounded upon Nieveen (2010) on educational design research, the study designed, developed, and evaluated a CAR textbook as an educational intervention to solve complex problems in educational practice. In this way, the textbook was formatively evaluated at every stage of its development. Formative evaluation is to evaluate a product, which in this study is a textbook to improve its quality (van den Akker, 1999). This research was conducted in Aceh Besar District, involving teachers from various Aceh Besar.

Participants

In developing the CAR textbook, this study involved several parties to gain their perspectives, as PAR methodology requires to integrate users' perspectives (Reason & Bradbury, 2008), including 2 lecturers, 29 teachers, and 2 staff of MONE and MORA. The total number of participants who participate voluntarily in the research was 29 people. They were all women. There were 10 to 15 participants that participate consistently in almost every session. In terms of the age group of participants, the distribution varies widely. Starting from the age group 21-30 years, 31-40 years, 41-50 years to the age group 51-60 years. However, most of them came from the age group 41-50 years

(45%), followed by the 31-40 years (28%), 51-60 years (21%), and 21-30 (7%). All participants (100%) declared that they had completed their undergraduate education (S1). Thus, they have had experience in writing and researching for their thesis requirements as a requirement for graduation.

However, only 6 (20.7%) of those had participated in the CAR training, whereas 23 people have never been (79.3%). The majority of them did not have the competence regarding the CAR, and only 5 have ever carried out the CAR. In other words, out of the 29 participants, only 17% had ever implemented CAR. 12 participants (41%) stated that they had taught for between 11 and 15 years, while 7 people (24%) of them had taught between 6 and 10 years, followed by 5 people (17%) who had taught for 1 to 5 years. The other group, 3 people (10%) have taught 26 to 30 years. Moreover, 13 people had a strong intention to do CAR, the remaining 16 people just wanted to do it.

Procedure

Before developing the textbook, we employed the first-phase SoCQ Questionnaires distributed to teacher-participants to measure the teachers' feelings and concerns about an innovation (the CAR textbook). There are seven stages of concerns in the SoCQ, including Unconcerned (0), Informational (1), Personal (2), Management (3), Consequence (4), Collaboration (5), and Refocusing (6). Teachers at stage 0 are not concerned about the change, which in this study is CAR, where teachers at stage 1 are concerned about CAR, but are still seeking information about it. Teachers at stage 2 have also been concerned about CAR, but feel that they lack the ability to do it. Teachers at stage 3 are concerned about CAR, but are still worried about all the materials needed to do it. Those at stage 4 are concerned about CAR and

are also concerned about how CAR affects their teaching and students. The teacher at stage 5 has been concerned about CAR, and has attempted to seek information about how his/her colleagues have used it. The last stage is refocusing, in which the teacher has understood the benefits of CAR, the need to do CAR, and why it is necessary. Even the teacher at this stage may begin to make changes to CAR to reach better outcomes.

Following the first-phase SoCQ, we used several stages to produce a CAR design, such as the ADDIE (Analysis, Design, Development, Implementation, Evaluation) theory (InstructionalDesign.org., 2018; McKenney, 2001). Firstly, we analyzed the needs and context, reviewed literature about CAR, and developed a conceptual framework. Secondly, we relied on the analysis results to design Prototype 1 of the textbook, starting from the table of contents. Thirdly, using the existing design, we proceeded with development into Prototype 2 and Prototype 3. Fourthly, Prototype 4 was tried out for implementation, followed by the distributing the second-phase SoCQ to understand the participants' improved understanding about the designed textbook. The final step we did was to evaluate the textbook by interviewing five of the teachers. However, we did formative iteratively and participatory evaluations at each stage, as designing a curriculum product is an iterative process (Voogt et al., 2019).

The evaluation of the validity of the CAR textbook underdevelopment was through the self-evaluation by researchers. Then, the Provincial MONE and MORA staff members were involved as they could supply information or inputs about the government's expectations for the CARs carried out by teachers and lecturers. Furthermore, teachers and lecturers were invited to provide opinions about validity. Meanwhile,

to evaluate the practicality of the textbook, teachers were involved. The triangulation of the questionnaire (SoCQ) and the interview was held, as triangulation can help validate the data (Bachri, 2010). Their opinions and experiences in using the textbook are valuable for improving the product quality to make it easier to use or user-friendly. In this case, two lecturers who have expertise in the CAR field and teach the subject from Ar-Raniry Islamic State University, especially from the teacher training faculty in Banda Aceh, were involved in a one-on-one evaluation of the practicality of the CAR textbook chapter. The process of the interview was in Bahasa Indonesia to enable them to express their opinions freely. The SoCQ was also in Bahasa to ease the teachers in understanding it.

Data analysis

The data analyzed for this research emanate from questionnaires and interviews with teachers. The data from the SoCQ about their concerns on CAR were analyzed by calculating the percentage. In this way, it can display at what stage they have concerned about CAR. Other data analyzed were from interviews of the teachers. Data collected from teachers' interviews were analyzed using Miles and Huberman's (1994) framework, ranging from reducing the interview texts, making verification, to drawing conclusions. The data in Bahasa Indonesia were then translated into English for this paper.

■ RESULTS AND DISCUSSION

Furthermore, other parts that are the main part of the questionnaire are the level of concerns and the level of use of CAR by teachers. This is to determine the extent to which the teachers who

are participants in the collaborative writing of the textbook have understood CAR and have used it so far. This needs to be made to determine their previous knowledge and experience as well as the level of discrepancies between before and after participating in this collaboration.

Stages of Concerns Questionnaire (SoCQ) on CAR

For each question in the stages of concerns (SoC) questionnaire, the answer options are from 0 to 6. The value goes from never knowing even though to having new ideas about better practices. An example of the meanings from options 0 to 6 can be seen as follows:

0. *I have never known about CAR;*
1. *I want to know about CAR;*
2. *I am wondering whether CAR has positive effects on my professionalism;*
3. *It seems too complicated and time-consuming to implement CAR;*
4. *How does the use of CAR for the quality of my learning?*
5. *I really care about CAR and even invite my friends to do it;*
6. *I even have additional ideas on how to implement CAR to get better results.*

For example, option 0 refers to whether the teacher has ever heard of CAR. The answer 0 means that the teacher has not concerned about CAR (level of *ignorance*). For answer option number 1, it means that the new level teacher wants to know what CAR is (level of *curiosity*). Answer 2 means that the teacher wants to know whether learning CAR has an impact on learning and promotion (level of *consequence*). Meanwhile, if the answer is 6, it means that the teacher already understands the CAR very well and even has new ideas about it.

Table 1. Stages of concerns of the teachers on CAR

No	Statements	Options							
		0	1	2	3	4	5	6	
1	I was able to find problems in my own teaching.	5	10	7	2	2	2	1	
2	I know how to develop a proposal for CAR.	7	12	5	2	1	1	1	
3	I know how to create a background problem for a CAR proposal.	6	14	1	2	4	0	2	
4	I know how to formulate aims in a CAR proposal.	7	13	2	5	1	0	1	
5	I know how to formulate research questions for CAR.	6	12	6	2	1	0	2	
6	I know how to formulate aims for a CAR proposal.	8	14	3	2	0	0	2	
7	I know how to discuss literature review in CAR.	9	10	4	1	3	1	1	
8	I know the function and how to explain the theoretical framework in CAR.	8	11	4	1	2	1	2	
9	I know the function of conceptual framework in CAR.	9	12	3	1	1	1	2	
10	I know how to describe the CAR methodology.	10	15	1	2	0	0	1	
11	I know how to develop cycles in a CAR.	5	15	5	1	2	1	0	
12	I know how to collect data for CAR.	6	14	6	1	1	1	0	
13	I know how to analyze data for CAR.	9	12	4	3	0	1	0	
14	I know how to discuss the outcome of the CAR.	8	14	2	2	1	1	1	
15	I know how to draw conclusions in CAR.	7	15	2	2	1	1	1	
	Total	110	193	55	29	20	11	17	

Table 1 shows that the stages of concern (level of concern) of the teachers towards CAR is mostly still at levels 0 and 1, with the total scores 110 and 192 respectively. The finding shows that most of them were still at the level of *Ignorance* and *Curiosity* (Hall & Hord, 2011), even though some of them have already known about the CAR. Meanwhile, the scores on their concerns on the level of *Personal* (2), *Management* (3), *Consequence* (4), *Collaboration* (5), and

Refocusing (6) are 55, 29, 20, 11, and 17 respectively.

The validity of the textbook

In semi-final version of the textbook, the teacher-participants were asked how they feel about its validity, the content validity and construct validity. Table 3 shows that in terms of validity, the teachers perceived that the textbook was regarded valid. The purposes in every chapter of

Table 2. Teachers' perceived validity of the textbook

No	Statements	Options				
		1	2	3	4	5
1	Chapter I of the book has clear purposes.	0	3 10.3%	5 17.2%	20 69%	1 3.5%
2	Chapter I of the textbook has contents/materials that is suitable for achieving the purposes.	0	3 10.3%	5 17.2%	20 69%	1 3.5%
3	Chapter II of the textbook has clear purposes.	0	0	5 17.2%	24 82.8%	0
4	Chapter II of the textbook has contents/materials that is suitable for achieving the purposes.	0	0	5 17.2%	24 82.8%	0

Note: 1 = not true at all; 2 = not true; 3 = not know; 4 = true; 5 = very true.

the textbook are linked to the contents, as indicated in the high percentage of the teacher-participants who chose option 4 in all question items. Four in this research represents “true,” meaning that they perceived that the textbook has goals and the contents, and they are interlinked.

Table 3. Teachers’ perceived practicality of the textbook

No	Statements	Options						
		0	1	2	3	4	5	6
1	The textbook facilitates me to find problems in my own teaching.	0	0	2	20	4	2	1
2	Using the textbook, I become to know how to develop a proposal for CAR.	0	0	7	19	1	1	1
3	I can use the textbook to create a background for a CAR proposal.	0	0	1	19	6	1	2
4	Using the textbook, I can formulate aims in a CAR proposal.	0	0	2	19	6	1	1
5	Using the textbook, I can formulate research questions for CAR.	0	0	6	19	1	0	2
6	Using the textbook, I can formulate the significance for a CAR proposal.	0	0	3	20	4	0	2
7	The textbook supports me in writing literature review in CAR.	0	0	4	20	3	1	1
8	Reading the textbook, I know the function and how to explain the theoretical framework in CAR.	0	0	4	19	3	1	2
9	Using the textbook, I can easily know the function of conceptual framework in CAR.	0	0	3	20	3	1	2
10	The textbook enables me to describe the CAR methodology.	0	0	1	20	7	0	1
11	Using the textbook, I become to know how to develop cycles in a CAR.	0	0	5	19	4	1	0
12	Reading the textbook, I become to know how to collect data for CAR.	0	0	2	19	7	1	0
13	Using the textbook, I become to know how to analyze data for CAR.	0	0	3	19	6	1	0

14	Using the textbook, I become to know how to discuss the outcome of the CAR.	0	0	2	19	6	1	1
15	Using the textbook, I become to know how to draw conclusions in CAR.	0	0	2	19	6	1	1
	Total	0	0	47	290	67	13	17

The practicality of the textbook

Table 3 indicates that most of the teachers' perceptions of practicality have been dominated by options 3, 4, and 2 consecutively. This means that the teachers have changed their concern level to the management issue, based on the stages of concerns (Hall, & Hord, 2011) framework, such as the complication of using the textbook for conducting CAR and the time-consuming.

The data from the survey were also triangulated with the data from the interview. After the textbook draft was finished, we interviewed five participating teachers about the perceived ease of use of the textbook at hand in implementing CAR and writing its reports. The respondents expressed their feelings of deep satisfaction with the textbook developed, ranging from each chapter's goals, content, and evaluation. On average, they express positive things. These were the most frequent themes that emerged in response to the question on the textbook's practicality. Among their expressions are those of Mrs. NF as follows:

Excerpt 1:

I think this book is easy to use because the contents are developed together. Getting started is easy, especially when writing headlines and background issues that get to the point. So far, we have attended CAR training, and we describe the results of our work, no one is to blame. They mostly say yes. But this is the first time the results of our work have been thoroughly examined, and their reasons are logical.

Other teachers (KM) who also participated in the training rated it as follows:

Excerpt 2:

The book is very guiding. We previously did not know what to write on the background of the problem. But the presence of the book makes clear what is worth writing. However, its implementation still requires direct guidance.

Another teacher (HN) expressed something positive too. As said in the following description:

Excerpt 3:

This book adds to my insight into writing CAR proposals and reports. I became eager to write my handbook. So far, we have to admit that there are several parties who have taken the easy way by paying other people to make it. That is because you are unable to make yourself or you are lazy to think. But the ugliness, it's not based on problems in class itself.

AW also expresses a similar assessment as in the following description:

Excerpt 4:

Yes, this book is, for me, important and easy to read. It is structured in sections, making it easy to use to write CAR. Anyway, it fits into a writing guideline.

Another teacher, MN, expressed the same thing, as follows:

Excerpt 5:

Yes, as this Mother said, I feel the same way. This book is easy to use as a guide for CARs. Every chapter and sub-chapter of the CAR is clearly written. The language is easy and light. Suitable for any study group.

This study has evaluated the quality of the CAR textbook developed collaboratively via PAR against the two criteria: its validity and practicality. Questions about the validity were about the textbook's components. Based on the findings, the CAR textbook met the requirements expected by the Education Office. In other words, the components meet the validity criteria because they are what teachers expect at school to do. As the teachers were involved in writing the book, they became aware of the essential steps in implementing CAR and reported the results. This finding corroborates the results of Oja and Smulyan's (1989) research that CAR helps individual and professional development.

As for the practicality of using the textbook, it is vivid in the results of the two surveys and interviews with several teachers who took part in this research, the books produced are considered practical for their use in doing their CAR. The teachers made it easy to understand parts of the book. However, of course, they still have to be scaffolded, even though the scaffolding has been lower and lower. This finding confirms similar results to previous studies, including the results of research conducted by Handoyo (2015) and Stewart (2010), that PAR in developing a textbook with potential users can increase the convenience for them to use these products. The interview results show that the teacher feels that he can learn a lot about CAR through the book. This reinforces the results of Handoyo (2015) and Stewart's (2010) research findings on PAR's effectiveness in producing a textbook. However, the try-out has not yet been carried out to see the results.

■ CONCLUSIONS

After discussing the findings, this research comes up with several conclusions. Firstly, this research adds to the knowledge and skills of teachers involved in CAR and increases the validity of the contents of the textbook developed

collaboratively. Secondly, the textbook becomes practical for use by teachers who are involved in CAR training and PAR.

However, despite many efforts done in developing the textbook, the research had several challenges that may have reduced the textbook's quality. Firstly, developing the textbook with the teachers was relatively short and relied on their motivation to participate in obtaining the certificate rather than experiences in the knowledge. Secondly, the teachers' participation was fluctuating, and their participation in the development process was relatively low. Some of them did not come on the first day, and some missed the meeting on the second day. Their motivation was not to obtain knowledge about how to do CAR but to get a training certificate. Thirdly, they had feeble knowledge of CAR, which requires us as the researchers to make high scaffolding. Therefore, further studies need to be done pertaining to the teacher participants' knowledge and skills during such a training program. Moreover, their knowledge and skills need to be formally tested by the government to support their certification to make them more serious in participating in the training.

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