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Abstract

The objective of our study was to examine the understandings of elementary school teachers who implemented classroom action research (CAR) in their professional life. A phenomenological study approach was employed in this research to explore the elementary school teachers' understanding of their CAR views and to uncover the difficulties they experienced when implementing it. We collected the research data from interviews with 12 public elementary school teachers. The results of our study show that elementary school teachers comprehend the benefits of CAR, namely enhancing the quality of learning and developing their professional careers. However, they still experience difficulties in implementing CAR. Inadequate acquisition of knowledge about the substantial components of CAR, weak teacher self-management and insufficient school resources are hindering factors preventing teachers from implementing CAR in their professional life..

Keywords: Action research, elementary school, teacher competence, teacher difficulties, teacher experiences

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1. Introduction

1.1. Theoretical framework

Teachers' quality exhibits the quality of their teaching (Kaplan & Owings, 2002). This statement implies that quality teaching is affected by qualified teachers. The quality of teacher knowledge influences the quality of their education (Borg, 2018; Kersting et al., 2012). Therefore, various competencies related to their field of work determine the quality of qualified teachers. With adequate competence, teachers can guide their students to learn effectively, adapt to their professional environment, innovate in their field of work and improve their professional careers.

Teacher competence has become a crucial issue, and the government continues to encourage its development. In Indonesia, regulations about teacher competence exist in the *Regulation of the Minister of National Education of the Republic of Indonesia number 16 of 2007 concerning academic qualifications and teacher competence* (Ministry of Education and Culture of the Republic of Indonesia, 2007). Continuously, the Government of Indonesia strives to develop teacher competence to enhance their performance. Every teacher working at the formal education level, at both the early childhood education level and the elementary and secondary education levels, should have four essential competencies, including *pedagogic competence, personality competence, social competence and professional competence* (Ministry of Education and Culture of the Republic of Indonesia, 2007). With these competencies, teachers can conduct all their duties and responsibilities properly.

Specifically, these competencies are applied when the teachers are performing their duties in their respective education units. Pedagogic competence depends on the teachers' ability to manage learning and guide students. Personality competence shows the teachers' ability to display their self-image as a good role model for the students and the community. On the contrary, social competence indicates teachers' capacity to behave appropriately a social context. Professional competence measures teachers' ability to perform their teaching profession and the knowledge in general.

Our study covers one field of the teachers' essential competencies, namely professional competence. This competence is critical to study due to its overall effect on improving the quality of education and learning. The efforts in researching the teachers' work related to professional competence have exposed the researchers in the field of teaching. However, in the teaching field, research has often been deemed a burden and difficult to conduct (Bullo et al., 2021). Research culture is more prevalent among academicians at the university level than at the elementary and secondary-level teachers (Garde-Hansen & Calvert, 2007; Iqbal et al., 2018; Patel, 2016). Teachers rarely participate in research projects for knowledge development (Hancock, 1997), indicating that research activities have not become as widespread as teaching activities.

Teachers' research activities at the elementary and secondary education levels primarily serve as an act of reflection on the pedagogical practices conducted by teachers (Fitria et al., 2019). In this context, the research activity involving teachers at the elementary and secondary education levels is classroom action research (CAR). CAR is a crucial tool enabling teachers to find a way that is best for the learning classes they manage (Mettetal, 2002). The main objective is evident, i.e., to enrich student achievement. Teachers should work hard to discover what is best to maximise learning for their students. CAR facilitates teachers to meet the students' learning needs.

The philosophy behind CAR implementation is principally reflection and improvement. CAR activities are teachers' obligation as to their professional competence. Specifically, CAR serves as a means for teachers to enhance the quality of the learning process to increase student achievement

(Pandiangan, 2019). With CAR implementation, teachers will find weaknesses in their pedagogical practice, and reflect and plan necessary corrective actions. In the Indonesian context, CAR results can serve as a tool for teachers to promote to a higher level. CAR is critical to improving the learning quality and it can encourage teachers' professional career development concurrently.

In Indonesia, one of the essential requirements to be fulfilled by teachers is to promote to a higher level through scientific publications. Teachers must publish the results of their research in appropriate scientific journals. Additionally, teachers can present the results of their research through teachers' scientific forums.

Based on statistical data from the Ministry of Education and Culture of the Republic of Indonesia, there exists only 0.47% of the total 2.69 million teachers in Indonesia who have achieved the status of Guru Madya (a term for teachers at the high level), and about 0.02% of the teachers who have achieved the status of Guru Utama (a term for teachers at the highest level) (Slamet, 2020). This shows that teacher performance related to scientific publications is not satisfactory because only a few teachers can achieve a higher teacher rank. The low performance of teachers in the field of scientific publications might be associated with research activities not appropriately implemented in the school environment (Indonesian Institute of Sciences, 2017). Thus, the teachers' inadequate ability to conduct CAR is the inhibiting factor for teachers reaching a higher rank.

1.2. Purpose of the study

Our study seeks to reveal the problems occurring behind the low performance of teachers for research. Specifically, it aims to examine the experiences of elementary school teachers when implementing CAR in their professional life. Our research tries to address two essential research questions:

- What do elementary school teachers think about CAR?
- What types of difficulties are experienced by elementary school teachers in implementing CAR?

Addressing these issues will be beneficial as a crucial input to enhance the quality of elementary school teachers' performance in the future.

2. Method and materials

2.1. Research model

We used the transcendental phenomenology as a qualitative research method suggested by Moustakas (1994). The purpose of using the phenomenological study was to examine the experiences of elementary school teachers about their views on CAR and the difficulties they experienced when implementing it. Transcendental phenomenology has its peculiarities in finding the essence of knowledge and sees the experience as an inseparable relationship of the subject and the object (Moerer-Urdahl & Creswell, 2004). Determination of data sources in our study was conducted purposively, based on the completeness of information needed by researchers (Rukajat, 2018). Depending on these considerations, some school teachers were the essential data sources.

2.2. Participants

Twelve Twelve public elementary school teachers were the participants. These teachers worked in four public elementary schools in rural areas. Three elementary schools were in the same sub-district area, while one was in a different sub-district area. Six of the 12 elementary school teachers lived in

urban areas, not too far from the school they worked, while the other 6 teachers lived in rural areas close to the school they worked.

The number of participants in our study was in line with the recommendations of Creswell (2007), who proposed 3–15 research participants for phenomenological exploration. All of the participants majored in elementary school teacher education. Seven of them were teachers with more than 10 years of teaching experience, while the other 5 were new teachers with less than 10 years of teaching experience. Table 1 summarises the demographic information of our participants. For anonymity, all participants' names have been replaced with pseudonyms to safeguard their confidentiality.

Table 1. Participants' demographics and personal details

Participants	Sex	Experience as a teacher
Cirus	Male	19 Years
Olivia	Female	20 Years
Luna	Female	8 Years
Arthur	Male	17 Years
Anita	Female	8 Years
Def	Male	9 Years
Meily	Female	15 Years
Peggy	Female	17 Years
Alrik	Male	6 Years
Relly	Male	18 Years
Sam	Male	7 Years
Agnes	Female	14 Years

2.3. Data collection tools and procedures

We conducted this research in North Minahasa, an area in the northern part of Indonesia, in August 2021. The data collection was carried out in two ways because the COVID-19 pandemic led to social restrictions in several regions in Indonesia. As the first method, we conducted indirect interviews using the voice note facility available on the WhatsApp application to the elementary school teachers in urban areas. We recorded our interview questions and sent them to the teachers using the WhatsApp application. We gathered information regarding the telephone numbers of the teachers from their respective principals.

The second method was directly interviewing teachers in rural areas by implementing strict health protocols, especially masks. Before collecting the data for this research, official approval from the schools involved, including our participants, was obtained. The researchers were also committed to protecting the participants' privacy and confidentiality in terms of personal information. Therefore, we used a pseudonym for each of our participants.

Data were collected through semi-structured interviews, specifically face-to-face interviews. We set the semi-structured interview to examine the teachers' experiences, especially about their CAR views. Additionally, this interview aimed to investigate the various difficulties they encountered when implementing CAR.

The interview took between 40 and 60 minutes. During the interview, the researchers tried to form pleasant communication so that participants felt comfortable and were willing to share their experiences. The researchers recorded the entire interview using a high-quality voice recorder application, specifically for face-to-face interviews. It ensured the acceptable quality of interview recordings.

2.4. Data analysis

Data analysis in this research employed analytical reduction based on three essential phases, namely examining and studying important statements stated by the participants; grouping statements into meaning units and central themes; and compiling a description of the essence of the participants' overall experience of what and how they experienced it (Moustakas, 1994). Before conducting an analytical reduction, the researchers converted the voice recordings of the discussions into text format. It facilitated the process of checking the information. The researchers carefully examined the information contained in the text of the interviews by reading it repeatedly. The researchers identified important statements raised by participants and grouped them into units of meaning and central themes. Based on these main themes, we described the whole phenomenon experienced by the participants.

3. Results and discussion

Six main themes yielded the results of the interview analysis with the participants. These six main themes focus on two core research questions: school teachers' views on CAR and the difficulties they experience when implementing CAR. The six main themes found are based on the analytical reduction. They have two parts, namely 1) the relevance of CAR having three main themes, including a) teacher self-development, b) teacher performance improvement and c) collaboration development; and 2) teacher difficulties in implementing CAR having three central themes, including a) substantial CAR components, b) teacher self-management and c) school resource support.

Comprehensively, the researchers seek to describe the findings briefly and clearly and discuss them through the interpretative lens. The researchers try to combine the research findings section with the discussion section. This method is used to understand the relevance of elementary school teacher experience in implementing CAR.

3.1. The relevance of CAR

In this section, three main themes cover elementary school teachers' views on CAR. These themes include 1) teacher self-development, 2) teacher performance improvement and 3) collaboration development. Each of these central themes is presented below.

3.1.1. Teacher self-development

The central theme of teacher self-development changes based on the results of the analytical removal conducted. This central theme consists of five meaning units. Table 2 gives the results of the analytical reduction for this first main theme.

Table 2. The results of analytical reduction for the teacher self-development central theme

Number	Meaning units	Central theme
1.	Very useful for self-development	Teacher self-development
2.	Efforts to improve teaching skills	
3.	Expanding teacher knowledge	
4.	Produce scientific work	
5.	Useful for promotion	

Teacher self-development is an inseparable part of continuous professional development for teachers. Ongoing professional development for teachers in Indonesia is based on the Regulation of the Minister of State for Administrative Reform and Bureaucratic Reform of the Republic of Indonesia number 16 of 2009 (Ministry of State Apparatus Empowerment and Bureaucratic Reform of the Republic of Indonesia, 2009). Implicitly, the regulation mandates every teacher to develop their abilities in meeting the demands of work in their professional scope. Various socialisations conducted

by the government through the relevant departments have impacted teachers' understanding of the relevance of self-development, specifically about scientific publications and innovative works.

Therefore, CAR is an essential means for continuous professional development for teachers, specifically in scientific publications. Teachers have had the correct understanding of the benefits of CAR for their sustainable professional development so far. Teachers express their views on CAR as a valuable tool for self-development. Another teacher stated that CAR improves the teachers' teaching skills. Moreover, the teachers also believe that CAR implementation helps expand their knowledge in conducting their professional duties. The examples of teachers' statements fitting this central theme are as follows:

- '...for me, classroom action research is important for teachers' self-development, especially in order to be able to write a research well' (Arthur).
- 'Teachers' teaching skills can increase if they know how to practice classroom action research' (Alrik).
- 'Through classroom action research, teachers have wider knowledge to address the students' needs' (Agnes).
- 'If the classroom action research is successful, the teacher can automatically produce a scientific work' (Peggy).
- 'Classroom action research generates credit scores that are beneficial for promotion' (Cirus).

3.1.2. Teacher performance improvement

Professional teachers are teachers managing to learn professionally. Teacher professionalism relies on how teachers can perform effective pedagogical practices. Effective pedagogical practices performed by teachers will support the achievement of student learning outcomes improvement. All teacher achievements coming from practical pedagogical practices determine teacher performance.

Teacher performance improvement is the second central theme found in this research. This second central theme consists of four meaning units. The results of the analytical reduction for this second essential theme are presented in Table 3.

Table 3. Analytical reduction results for the central theme of teacher performance improvement

Number	Meaning units	Central theme
1.	Impact on the student achievement progress	Teacher performance improvement
2.	The benchmark for teachers' success in teaching and learning activities	
3.	Improving the learning quality	
4.	Increase students' learning enthusiasm	

Teachers clearly understand the benefits of classroom research for their learning environment. Teachers assume that CAR contributes to student achievement in learning. This assumption is very reasonable. The appropriate corrective actions will follow-up learning problems encountered in the implementation of CAR.

In our research, teachers see CAR as a measure of teachers' success in learning activities. CAR's function includes improving teachers' teaching practices and increasing student achievement (Purba & Sukoco, 2019). Furthermore, the use of learning media teachers use when implementing learning improvement actions will build students' passion and interest in learning. Positive changes occurring in

the learning practices improve teacher performance, which is in line with Mailool et al. (2020b), stating that increased student achievement depends on increased teacher performance. The examples of teachers' statements that fit this central theme are as follows:

'...I believe that the classroom action research which teachers do will definitely have a positive impact on improving student achievement' (Meily).

'The results of classroom action research become a benchmark for teachers' success in learning' (Luna).

'Improvement in the quality of learning can be achieved when teachers are willing to conduct classroom action research' (Sam).

'...Students will usually be interested in learning as long as the teacher uses a variety of learning media, ... and that can be done in the practice of classroom action research' (Olivia).

3.1.3. Collaboration development

Learning skills and innovation are essential elements of the core subjects and interdisciplinary themes of the 21st century. In this regard, the Partnership for 21st-Century Learning (2007) has proposed collaboration as one of the critical skills needed by teachers and students in the 21st century. Collaboration is necessary to build an effective and innovative learning environment in a rapidly changing era. Specifically, collaboration is a prerequisite to solving complex problems in the world of education and social life. Through collaboration, we will achieve solutions to cross-disciplinary problems.

In our research, the central theme of collaborative development depends on the analytical reduction results. This central theme consists of two meaning units. The results of the analytical reduction for this third main theme are presented in Table 4.

Table 4. Analytical reduction results for the central theme of collaboration development

Number	Meaning units	Central theme
1.	Increase the participation of joint learning between teachers and students	Collaboration development
2.	Build collaboration with colleagues	

Teachers assume that CAR practice has the potential to increase joint learning participation between teachers and students. Participation in learning between teachers and students is a form of collaboration beneficial for developing an effective learning environment. With the cooperation shown through participation in learning between teachers and students, the learning climate becomes conducive; teachers can teach effectively; students can understand the subject matter well; and student achievement will increase. An example of a teacher's statements that match this central theme is as follows:

'Classroom action research practices are able to increase learning participation between teachers and students' (Def).

Collaboration may form a proactive and dynamic learning environment. The students are not shy in asking about the lessons which they have not understood and even are passionate about providing ideas and solutions, which allow their mindset development, improving their ability to argue. These things are important to stimulate their critical thinking skills and problem-solving skills.

Our study also found that teachers view CAR practice as a means to build collaboration among teachers. Ideally, CAR practice requires collaboration among teachers to find practical solutions to the learning problems they encounter. Collaboration between disciplines for CAR serves to find the best solution for the issues of learning content experienced by teachers, such as physics teachers' in explaining fundamental mathematics concepts (Retnawati et al., 2018). Thus, one discipline can help meet the needs of other fields.

Within the school scope, the collaboration between all school elements is a factor supporting the success of school programmes (Mailool et al., 2020a). Thus, educational work does need collaboration. An example of a teacher's statement that matches this central theme is as follows:

'In classroom action research, teachers can collaborate with their colleagues' (Anita, Alrik).

3.2. Elementary school teachers' difficulties in implementing CAR

In this section, three central themes are presented to understand the elementary school teachers' difficulties in implementing CAR. These themes include 1) the substantial components of CAR; 2) teacher self-management; and 3) school resource support. Each of these central themes is described below.

3.2.1. Lack of teacher understanding of the substantial components of CAR

The substantial components of CAR are the fourth central theme found in this research. This central theme consists of six meaning units. The results of the analytical reduction for this fourth central theme are presented in Table 5.

Table 5. Analytical reduction results for the central theme of car substantial components.

Number	Meaning units	Central theme
1.	Confused to determine the priority of the problem to research on	CAR substantial components
2.	Confused in choosing and applying the appropriate method	
3.	Inability to design research instruments	
4.	Inadequate learning media	
5.	Less proficient in processing data	
6.	Feeling that making a report is complicated	

Essentially, CAR is scientific research. Therefore, scientific principles are valid when implementing CAR. Scientific principles in research are evident in the appropriate methodologies.

Usually, both empirical and interpretative research requires a description of the research problem. The research problem describes the researcher's anxiety about a problem needing an explicit solution. The research problem is the starting point where the researchers determine how they to achieve sound results. By understanding the research problem, the researcher can provide a method suiting the needs of the research problem.

Teachers feel confused about determining the priority of the learning problem to be investigated, revealing that teachers have many learning problems that need to be solved. The teachers' 'prioritised problem' defines the priority of the problem or the level of urgency of the learning problem bothering the teacher. Additionally, teachers' difficulty determining the research problems priority in CAR

practice implies that teachers are not yet proficient in selecting and describing the research problems well. The examples of teachers' statements about this issue are as follows:

'I am confused in determining the priority of the problem in Classroom Action Research. How to formulate the problem requires adequate knowledge' (Luna).

'...Even if the research problem has been found, I find it difficult to narrate it properly' (Sam).

In our research, teachers have had difficulty choosing and applying research methods, designing research instruments, less supportive learning media and less proficient in processing the research data. They have had problems when compiling the research report. Thus, teachers have not understood the function of each substantial component of CAR. The examples for teachers' statements fitting this central theme are as follows:

'I find it difficult to choose and apply the appropriate method to my research problem' (Def).

'Designing the instrument is a difficult thing for me' (Sam).

'The learning media often do not support the implementation of this research' (Alrik).

'I'm not good at processing data, especially when it comes to numbers' (Luna).

'The most complicated part is making the report because it takes quite a long time' (Arthur).

3.2.2. Teacher failure in self-management

Teacher self-management is the fifth central theme in our research. In this central theme, there are six meaning units. The results of the analytical reduction for this fifth central theme are presented in Table 6.

Table 6. The results of analytical reduction on teacher self-management central theme.

Number	Meaning units	Central theme
1.	Lack of consistency to complete CAR	Teacher self-management
2.	It is difficult to do the research independently	
3.	Complex and lack of preparation	
4.	Lack of focus due to a lot of other work	
5.	Lazy to start because of time constraints	
6.	Most schools and teachers are busier teaching and doing administrative stuff	

Teacher self-management is a self-strategy needed to form order and control oneself through directed actions to overcome daily challenges and difficulties (Wehmeier et al., 2020). Everyone's challenges and problems are unique, depending on the activity and the environment around their life, including their work. Therefore, teachers need self-management to organise to overcome various challenges and difficulties related to their professional lives. Teachers must have the ability to enable themselves to suit the demands and needs of their professional environment.

In our research, teachers have difficulties implementing CAR, their professional obligation and responsibility. The lack of teachers' ability to manage causes them to fail in conducting CAR practices. Teachers are still not consistent in implementing and completing the responsibility for the CAR. Teachers also lack independence in their work and cannot plan well, causing poor time management. Thus, teachers still lack the self-management skills required to overcome the challenges and needs in their profession. The examples of teachers' statements fitting this central theme are as follows:

'I am inconsistent in completing classroom action research' (Olivia).

'I find it difficult when I have to do this research by myself' (Arthur).

'The difficulty I experienced when implementing classroom action research was the under preparation and the complexity' (Anita).

'My time is consumed by other jobs so that I cannot focus on performing classroom action research' (Cirus).

'...Administrative stuff often distracts me, so I cannot allocate time for classroom action research activities' (Relly).

3.2.3. Lack of support of school resources

Support for school resources is the sixth central theme in this research. This central theme consists of seven meaning units. The results of the analytical reduction for this sixth central theme are presented in Table 7.

Table 7. The analytical reduction results for the school resource support central theme

Number	Meaning units	Central theme
1.	The research climate in schools is less supportive	Support of school resources
2.	The learning atmosphere is not conducive	
3.	Training activities on research are less recommended by schools	
4.	Unavailable internet network	
5.	Differences in student enthusiasm	
6.	It is not easy to find colleagues who understand CAR	
7.	Difficulty in finding observers	

School resources are a collection of school potentials, functioning as a driving element for school work activities and programmes, to achieve the school goals. School resources consist of human resources, including principals, teachers, students and education staff. Additionally, school resources contain non-human resources involving learning infrastructure and facilities, school work programmes, learning climate, school environment and other supporting facilities. School resources are critical for teachers to support the implementation of their professional duties.

In our research, teachers have had difficulty implementing CAR due to a deficiency in school resources. Teachers revealed that the unsupportive research climate in schools was an essential factor hindering CAR implementation, which indicates that research has not become a common thing to be conducted in schools. Moreover, the inconducive learning process often prevents teachers from implementing CAR. Therefore, CAR should accompany the learning process in the classroom. Teachers also think that the school pays less attention to the teachers' research activities. Schools focus more on administrative issues for accreditation purposes.

In implementing CAR, teachers have challenges because it is not easy to find colleagues skilled in CAR. Collaboration between teachers who are not proficient in CAR with teachers experienced in implementing CAR helps teachers who are not qualified gain valuable new experiences, which is critical for developing teachers' knowledge and skills in implementing CAR. Teachers also stated that it

was not easy for them to find observers for the CAR project. These things reveal that the support of school resources, such as human and non-human resources, affects teachers in implementing CAR. The examples of teachers' statements showing this central theme are as follows:

- 'In my opinion, the research climate in schools does not support classroom action research activities carried out by teachers' (Alrik).
- 'I find it difficult to research in class because the learning atmosphere is not conducive' (Sam).
- 'Our school rarely recommends us to participate in scientific writing activities' (Meily).
- 'It is difficult to find references because the internet is not available in our school' (Agnes).
- 'Some students are enthusiastic, and some are less enthusiastic in participating in learning when I carry out classroom action research' (Anita).
- 'I find it difficult to find colleagues who understand classroom action research' (Peggy).
- 'My difficulty is that it is difficult to find an observer who helps me in carrying out classroom action research' (Luna).

3.3. The essence of overall experience of elementary school teachers in implementing CAR

CAR is a crucial aspect of ongoing professional development for teachers. Teachers have the responsibility to produce scientific works through independent research and group research. Moreover, teachers are the essential actors behind the improvement of students' achievement. When evaluated as such, CAR becomes a crucial tool for teachers to improve the quality of learning, thus enriching their students' achievement.

Our research examines teachers' experience in implementing CAR. The backgrounds are explored to reveal how teachers live the incident, including their views on CAR and the problems they face in implementing it. Our research will contribute to the development of teacher skills in the future.

On the one hand, teachers notice the importance of CAR for their learning environment and professional careers. On the other hand, they still face many challenges when implementing CAR in their professional life. A good understanding of the substantial components of CAR is a critical factor for the success of teachers in implementing CAR practices. Ideally, acquiring an account of these essential components is achieved through group learning involving teachers who are already skilled in practicing CAR, implying that CAR practice requires collaboration among teachers.

Moreover, teacher involvement in the training activities of scientific writing contributes to increasing teachers' understanding of the substantial components of CAR. Teachers have not experienced the activities providing practical solutions. Teachers still face many problems restricting their implementation of CAR. Furthermore, the school does not encourage teachers' professional training. Instead, teachers have to do unnecessary administrative stuff for the sake of school accreditation. However, professional teacher training, such as CAR training, has an essential effect on the progress of education and learning in schools, indicating that the school should consider the development of teacher abilities, specifically in terms of research.

Another crucial factor is self-management. The teachers' ability to plan effectively, learn independently, manage work schedules and personal commitment to achieving optimum results affects teachers' self-management. Furthermore, self-management reflects self-awareness to change things for the better (Judah & Richardson, 2006). Teachers should have self-management skills to adapt to a dynamic and rapidly changing educational and learning environment.

Our research has revealed a contrasting condition felt by teachers. As the teachers are too busy to teach and do their administrative stuff, they realise that CAR produces valuable scientific work as one

of the requirements for promotion in their professional careers. Additionally, teachers also recognise that the results of CAR are beneficial to improve the quality of their learning.

Poor time management is an inhibiting factor for teachers in implementing CAR. Thus, teachers must arrange their work schedules so that they do not clash with each other. A strong teacher commitment follows setting the right programme to conduct tasks according to the planned schedule.

Teachers had problems in completing their assigned CAR duties, depending on the independence of the teachers at work. It is critical that teachers be independent in their work and not rely on others. Therefore, independent exploration activities in learning about CAR are the duty of teachers. Curiosity is the essential key factor for teachers learning CAR independently and will motivate teachers to explore new knowledge and experiences about CAR practice.

The crucial knowledge about CAR is available on the Internet. However, teachers must be computer literate. Computer literacy is the global competency to be mastered by teachers. Elementary school teachers must have global competence to function effectively in their professional duties (Sinagatullin, 2019). With computer literacy, teachers will have many references of choices changing according to their needs.

Nonetheless, another obstacle experienced by teachers is the inadequate support of school resources about Internet facilities. Teachers require variable references based on their research needs, and these references are readily available on the Internet. The schools these teachers work in are in rural areas lacking infrastructure and public facilities, which can be challenging. Therefore, the role of the government through relevant departments is critical to address and resolve infrastructure issues in education.

Another problem with the support of school resources is the issue of mentoring. Teachers not proficient in practicing classroom research need peers who are already skilled in it. The practice of collaboration among teachers occurs in this mentoring process. However, it is not easy for teachers to find colleagues having good knowledge of CAR. Moreover, their schools do not encourage professional teacher training, specifically on research.

The findings in our study are in line with the results of Wangdi and Tharchen (2021). Thus, there exist some elementary school teachers having lesser than 10 years of work experience. Therefore, they urgently need to get professional teacher training, such as CAR training. The principal's leadership is very critical in making strategic policies for teacher development, including professional training. School leaders should follow the needs of teacher professional development continuously, which complies with the government's policy on sustainable professional development for teachers. The government's policies' deficiencies on sustainable professional development for teachers become more evident if examined further.

Based on a review of the overall experience of elementary school teachers in implementing CAR, we offer alternative solutions to overcome the problems experienced by teachers, as shown in Figure 1. The solution is intended for teachers who want to improve their competence in research. However, this must also involve the role of the principal to support the development of teacher competence sustainably.

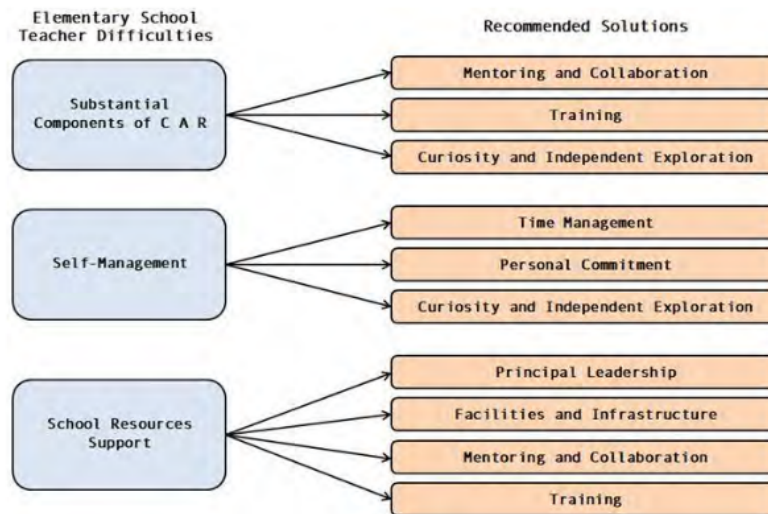


Figure 1. Teachers' difficulties in implementing car and recommended solutions

4. Conclusion and recommendation

Based on the research results, teachers have a correct understanding of the functions and benefits of CAR to improve the quality of learning and develop their professional careers. Teachers see CAR as beneficial for self-development, performance improvement and collaboration development. However, many challenges affect teachers when practicing CAR. The teachers' problems in implementing CAR include the teachers' lack of understanding of the substantial components of CAR, the failure of teachers in self-management and inadequate school resource support.

Many alternative solutions for the problems experienced by elementary school teachers are available, including the acquisition of knowledge about the substantial components of CAR through mentoring activities and collaborative practices, teacher training, independent knowledge and exploration. Moreover, effective self-management through effective time management, strong self-commitment and independent learning and willingness to explore new things is critical. Furthermore, the support of school resources can function through the attentive practice of serving principals, the availability of supporting facilities and infrastructure and the collaboration between teachers and other educational elements.

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