Teachers as Researchers: Skills and Challenges in Action Research Making

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Abstract
The study aims to determine the level of competency of teachers as researchers as well as determine the factors that affect them in action research. Quantitative research, specifically the descriptive design, was used. It was conducted in the second congressional district of Quezon Province, Philippines, composed of 147 elementary and secondary teachers who have started writing action research. Relevant data were gathered through a validated survey questionnaire. The study was facilitated with confidentiality. Responses were treated through weighted arithmetic mean. The results revealed that 1) 32 out of 38 skills in action research writing landed in the lower bracket of the competent level. However, six skills landed on the less competent level. It has been noted that teacher-researchers are weak in choosing the tools for data analysis and interpretation, encoding quantitative and qualitative data, and interpreting results from the software. They were also less competent in publishing their completed action research. 2) Knowledge, attitude, and resources were the factors that affected teachers in their engagement in conducting action research. The respondents were limited to 147 retrieved questionnaires from the districts of Dolores, San Antonio, Candelaria, Sariaya, and Lucena. For further study, it was suggested that future researchers might come up with a larger scope and population. The findings of the research may be important to teachers and administrators since it will serve as a baseline for the status of action research-making in the district. The results should be the focus of capability-building activities of teachers.

Keywords: Action Research, Research Making, Teacher Development

INTRODUCTION
Action research making has been part of the teachers' professional development since then. Some authors such as Marzo (2017), Merle (2016), Hine (2013), Hong & Lawrence (2011), and Hien (2009). Moreover, action research has been correlated with quality classroom instruction (Oestar, 2022). Consequently, the art of action research making has been intensified and has become one of the major professional development concerns of teachers and administrators nowadays. In DepEd Quezon, Merle (2016) found out that teachers' classroom problems are made solutions through action research, but a large percentage of teachers lack the technical know-how in research writing.

In the Philippine setting, DepEd Vision reiterates the role of teachers to continually improve their teaching strategies for the betterment of the stakeholders they serve (Merle, 2016). This could be done through action research making an essential tool for improving teaching and learning processes, innovation, child protection, leadership and governance, gender and sensitivity, and being aware of disaster risk reduction and other recurring and cross-cutting themes. Doing action research makes them a catalyst of change and brings development to every classroom they have. Thus, knowing problems in the classroom give them a chance to make innovation and solution to make changes.
However, action research making in public elementary and secondary schools may not be as popular as the number of teachers are not that equipped with the necessary knowledge, attitudes, and skills to do it due to some factors that hinder their engagement in action research. Some teachers may become demotivated and uninterested due to time constraints and heavy teaching workloads, as cited by Kutlay (2012) and Morales (2016).

The study aims to determine the level of competence of teachers as researchers, as well as to determine the factors that affect them in action research with an end view of developing a program for enhancing knowledge, skills, and engagement in making action research. Specifically, the study sought to answer the following research questions:
1. What is the level of competence of teachers in action research making?
2. What are the barriers that hinder the engagement of teachers in action research in terms of knowledge, attitude, and resources?

LITERATURE REVIEW

In the Philippines, the Basic Education Research Agenda of 2016 has become part of the Department of Education’s thrust of ensuring that school heads and teachers promote the adoption and conduct of education research in the country (Oestar, 2022). It is anchored on the purpose of addressing school concerns and issues problems and recommending solutions based on the findings of the research. Furthermore, Regional Memorandum No 144 s. 2015 implies that research is an approach that could help in analyzing the root causes of school-related problems and devise the most suited interventions that could solve such problems.

Erba (2013) pointed out that it was important to develop teachers’ competence in solving a problem and help them examine and build classroom practices and develop an understanding of their teaching and learning processes.

Ambag (2015) and Dalwampo (2017), in their separate study, found that teachers' skills and competence were the precursors in giving the best learning for the students. Since teachers act as the mediator of knowledge, they must continually upgrade and empower themselves. These findings were supported by Campbell (2011) when he stated that teacher-educators need to know more about action research as part of our classroom integration. Demin (2015) further added that teachers must have a comprehensive understanding and knowledge in conducting research to deal with the challenges that happen during the investigation. Likewise, Nuget et al. (2012), as reiterated by Marzo (2017), stated that teachers who engage in action research must tend to be more willing to self-assess and reflect on their practice and actions to improve their teaching.

Manongsong and Panopio (2018) suggested that to become a competent teacher, one should do several activities such as plan properly, provide effective instruction, evaluate the learning activities and use appropriate methods and techniques and perform and/or avail community linkage. These can make every classroom teaching and learning scenario conducive and effective. According to them, such capacity may grow over time because of experience and ongoing, pertinent capacity-building efforts.

With the above-mentioned need for teacher improvement, Morales et al. (2016) concluded that action research is a viable tool for improving teaching. Furthermore, conducting action research can help teachers discover new techniques and strategies, choose which suits them, and make effective instruction that could enhance students’ learning. Duma (2016) supported the claim when he emphasized the use of Strengthening the Performance of Educators through Action Research (SPEAR). He further believes that teachers must innovate, conduct research, reflect on their own performance and be ready to adapt to change.
Caingcoy (2020) dissected the findings on the research capability of teachers. According to Dapiawen (2017), graduate school faculty members were highly capable of carrying out a variety of research activities and had expertise in the components of research papers. Teachers have a high degree of research capability (Enero et al., 2017), a high level of competence in various research activities, and are highly well-versed in the knowledge and technical components of research capability (Cuntapay et al., 2014; Narag et al., 2016).

Garces and Granada (2016) mentioned some of the key factors that teacher-researchers must possess. They further concluded that for teachers to actively take part in action research making, they must have responsiveness, teamwork, opportunity, commitment, and negotiation skills. Moreover, Erba (2013) stated that teachers must have the interest, enough knowledge and skill, budget (time, financial and other resources), and context (availability of training, principals' support, and officers' involvement) for them to prosper in action research making.

Additionally, some other factors that might affect the engagement of teachers in action research making, presenting, and publishing, especially in public elementary and secondary schools, include but are not limited to time constraints and heavy workloads (Kutlay, 2012; Morales, 2016). Furthermore, Bocar (2013) stated that most of the time, research work can be tiring and tedious work to do.

Lack of support and training to begin with, were other reasons why teachers were not capable and equipped with skills in action research making (Clark & Embury, 2016). The same factors affecting action research making were also cited by Erba (2013) when he stated that lack of teachers' in-service training, lack of knowledge and skills, lack of attitude and interest, shortage of materials or resources, and financial problems could play a great role in affecting teacher practitioners in schools. Furthermore, Ulla, Acompanado, and Barrera (2017) stated that some of the challenges faced by teachers in action research making are lack of research knowledge and skills, heavy teaching loads, and lack of financial support.

Merle’s (2016) Project CAREs: A Vehicle for Intensified Instruction further revealed that there’s a need for DepEd Quezon teachers to improve their research-making skills and know-how. This went the same with the findings of Marzo (2017) when she stated that teachers should be competent in their field for better delivery of the lesson. This could be done through the enhancement of the teacher’s knowledge and skills in researching.

Linking to the present study, researchers believe that assistance was needed to cover the flaws that affect teachers in the implementation of action research making. Based on the readings from Norasmah and Chia (2015), coaching was necessary to increase teachers' understanding and confidence in the making of action research.

Being focal persons of action research in their respective schools and districts, the researchers came up with drafting a program that could further intensify the level of competence of teacher researchers and increase engagement in action research in the second congressional district of Quezon. Thus, the above findings supported that teachers' research competence must be evaluated on which of these needs to be strengthened and subjected to capability-building activities.

RESEARCH METHOD

Quantitative research, specifically the descriptive design, was used in the study. The researchers used a survey questionnaire. Some of the items in the survey questionnaire were lifted from the study of Marzo (2017) and Merle (2016). Each of the components was composed of a four-point Likert scale, where 4 is described as More Competent, 3 as Competent; 2 as Less Competent; and 1 as Not Competent. When it comes to the factors affecting engagement in action research making 1 stands for Strongly Disagree, 3 for Disagree, 2 for Agree, and 4 for Strongly
Disagree. Validation of the questionnaire was done by the officers of the Second Congressional District Research Committee since they are qualified and given the authority to review papers submitted in DepEd-Quezon.

The study was conducted on teachers in the towns of the second congressional district, such as Lucena, Sariaya, Candelaria, Tiaong, San Antonio, and Dolores, in Quezon Province (see Table 1). The study covered both elementary and secondary school teachers who were chosen purposively since they are the ones who are starting to do action research in their respective schools. With permission and endorsement from the Senior Education Program Specialist for Planning and Research and the help of research coordinators for each district, the survey questionnaire was distributed to the schools in the second congressional district of Quezon. Participants were assured of confidentiality. Data were collected, tabulated, and computed using MS Excel format. Weighted Mean was employed in the data analysis of the study.

| District       | Teachers |
|----------------|----------|
|                | Elementary | Secondary |
| Lucena         | 20        | 15        | 35        |
| Sariaya        | 19        | 15        | 34        |
| Candelaria     | 15        | 8         | 23        |
| Tiaong         | 15        | 8         | 23        |
| San Antonio    | 10        | 6         | 16        |
| Dolores        | 10        | 6         | 16        |
| **Total**      | **89**    | **58**    | **147**   |

**FINDINGS AND DISCUSSION**

This part of the study presents the analysis and interpretation of the gathered data from the questionnaire answered by the respondents.

| Statement                                              | WM  | Description |
|-------------------------------------------------------|-----|-------------|
| 1. Identifying the problems or issues to be addressed. | 3.09| Competent   |
| 2. Writing the introduction                            | 2.80| Competent   |
| 3. Formulating research questions.                     | 2.82| Competent   |
| 4. Making hypotheses.                                  | 2.82| Competent   |
| 5. Citing of related literature.                       | 2.84| Competent   |
| 6. Organizing related literature.                      | 2.82| Competent   |
| 7. Organizing related studies.                         | 2.73| Competent   |
| 8. Drafting theoretical framework.                     | 2.59| Competent   |
| 9. Drafting conceptual framework.                      | 2.53| Competent   |
| 10. Making interventions, output of the action research.| 2.62| Competent   |
| 11. Selecting research designs.                        | 2.61| Competent   |
| 12. Describing the research locale.                    | 2.92| Competent   |
| 13. Describing the research population.                | 2.89| Competent   |
| 14. Using appropriate sampling technique.              | 2.63| Competent   |
| 15. Reducing the research population to sample size.   | 2.64| Competent   |
| 16. Selecting appropriate data gathering instrument.   | 2.71| Competent   |
| 17. Preparation of the data gathering instrument.      | 2.62| Competent   |
| 18. Validation of the data gathering instrument.       | 2.64| Competent   |
| 19. Making ethical considerations in the conduct of action research. | 2.68| Competent   |
| 20. Selecting the most appropriate data collection methods. | 2.62| Competent   |
The data in Table 2 revealed that 32 out of 38 items fell on the competent scale. However, it was noted that their weighted mean was at the lower part of the competent bracket. Since DepEd CALABARZON promotes the culture of action research making, they continually extend efforts in conducting action research training and conferences annually. DepEd Quezon, through the Research and Planning Office, supports the region’s advocacy of making CALABARZON the leading region in terms of action research making.

The average weighted mean is 2.68 or generally falls in the lower bracket of the competent scale. This only shows that teachers, even on the competent scale, still need to further improve their knowledge and skills in conducting action research. Item number 1, or identifying the problems or issues to be addressed, has the highest weighted mean (3.08 WAM or agree). In reference to the Cycle of Inquiry, identifying the problem and its meaning is the first step in researching. Teachers are known to be good at identifying the weaknesses and problems in their own classrooms, and they can apply it well in doing action research.

Teachers are researchers in their own ways, making them somewhat competent in research. When they learn to find the root cause of the problem, make a solution, and record the improvements in their daily teaching and learning, these are just some of the indicators that teachers unintentionally turn into teacher-researchers. This was supported by the study of Mehrani (2017) when he stated that teachers become teacher-researcher when they investigate their own practices making them more analytical and reflective of their profession.

Another reason for their competency is their continuing professional development as teachers. Kto12 curriculum has made teachers search for greater knowledge through further education. Most teachers nowadays have their master’s and doctoral units giving them more background in thesis and dissertation writing. These make teachers somewhat competent in most of the skills in researching.

On the other hand, the 4 items with less competent descriptions are the skills in data analysis. The results showed that respondents were less competent in choosing the tools for data analysis and interpretation (2.45 WM), encoding quantitative data in software such as SPSS and SSB (2.43 WM), and interpreting results in software such as SPSS and SSB (2.32 WM), encoding
qualitative data in software such as Atlas and In Vivo (2.29 WM) and interpreting results from software such as Atlas and In Vivo Coding (2.50 WM). The results were supported by Campbell (2011), who declared that writing, collecting, and analyzing data was time-consuming.

Item number 38, or publishing the completed action research, has 2.44 WM, which yielded a less competent result. For teachers to publish completed action research, they must voluntarily submit their work to reputable peer-evaluators who will check their style, originality of work, and formatting of the manuscript. Most of the research journals and publications emerging will charge a fee for their services. These made teacher research end up in their completed action research after they presented it in a forum. Some teachers were afraid of publishing their work due to the presence of predatory e-journals, which charge a fee for uncredited publications.

On the other hand, another striking finding is the results in item 8, or drafting theoretical framework, and 9, or drafting conceptual framework. They landed on the lower bracket of the competent scale with 2.59 and 2.53 WM, respectively. Researchers may find it difficult to look for the difference between the theoretical and conceptual frameworks.

The above findings were backed up by the study of Caingcoy (2020) when he stated that teacher-researchers are proficient in conceptual knowledge but only marginally in computational and technical knowledge. This was also supported by the findings of Dela Cruz (2016) and Abarquez and Palbaca (2013). They stated that teachers are more capable of teaching if they are researchers in nature since they can find solutions and can document processes for the improvement of their teaching and learning.

According to Merle (2016), competencies that got low WAM ratings should be mastered. Teachers need to further improve their craft in action research making and enhance their competencies in writing them. This went the same with the recommendations of Leopango (2011) when he suggested that teachers need to teach beyond their preferred skills. They must increase their competency in analysis and self-awareness. Furthermore, Marzo (2017) stated that with the use of effective data gathering and analysis, action research becomes a pathway in knowledge building.

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Table 3. Factors Affecting Action Research Making in Terms of Knowledge

| This knowledge hinders me in conducting research... | WM  | Description |
|--------------------------------------------------|-----|-------------|
| 1. Misunderstanding of classroom-based Action Research | 2.78 | Agree       |
| 2. Misunderstanding of the procedures followed in conducting classroom-based Action Research. | 2.83 | Agree       |
| 3. Misunderstanding of research ethics. | 2.80 | Agree       |
| 4. Misunderstanding the importance of Action Research. | 2.85 | Agree       |
| 5. Misunderstanding the benefits of Action Research. | 2.91 | Agree       |
| **Average Weighted Mean** | **2.83** | **Agree** |

Table 3 shows that knowledge as one of the factors affecting action research making yielded an average weighted mean of 2.83 or agree. The findings were the same as the study of Merle (2016) when he declared that action research is not a new concept; however, educators did not know about it. Misunderstanding the benefits of action research has the highest weighted mean of 2.91 or agree. Most teachers are demotivated to do research because they are not aware of the benefits that they could have on it. As cited by Dalwampo (2017) and Vaughan and Burnaford (2016), teacher-researchers must be empowered and equipped with knowledge and skills as constitutes and crucial agents in developing high-quality and equitable, and inspiring education systems.

Addressing such hindrances was important to the present study. It can be concluded that conducting teacher-training programs and other activities on research can further strengthen competence in research.
Table 4. Factors Affecting Action Research Making in Terms of Attitude

| This attitude hinders me in conducting research... | WM | Description |
|-------------------------------------------------|----|-------------|
| 1. Less appreciation of the usefulness of action research in enhancing instruction. | 2.78 | Agree |
| 2. Less recognition of the usefulness of action research for my professional growth as a teacher. | 2.75 | Agree |
| 3. Unwillingness to write action research for intensified instruction. | 2.75 | Agree |
| 4. Unwillingness to write action research for effective intervention. | 2.77 | Agree |
| 5. Unwillingness to write action research for my promotion. | 2.68 | Agree |
| **Average Weighted Mean** | **2.78** | **Agree** |

The data shown in Table 4 implied that the attitudes of the teachers affect administering action research. Appreciation of the usefulness of action research in enhancing instruction has the highest weighted mean, while willingness to write action research for promotion was the least. It has an average weighted mean of 2.75 or agrees. According to Borg (2014), some teachers hold a negative view of the idea of doing research and its effect on them professionally. However, Taruc (2016) has the opposite finding when they stated that teachers have positive beliefs and favorable attitudes toward research and action research. Even though attitude hinders teachers in research making, they expressed a positive intent to engage in action research.

Further, according to Wong’s (2019) research, training in research, attitudes toward research, and understanding of research may all be used to explain how well educators can do research. Regression analysis in the study of Fetalver (2010), as cited in Caingcoy (2020), revealed that attitudes and personal interest in research, educational attainment, leadership abilities in research (admin), research facilities, duration of service, and research training all had an impact on one’s capacity to conduct research. Thus, if these strands can be strengthened, then teachers’ attitudes toward research shall be improved as well.

Further, it can be concluded that appreciation, recognition, and willingness to participate in action research making can increase when the usefulness and benefits of doing such research are clearly explained to teachers.

Table 5. Factors Affecting Action Research Making in Terms of Resources

| Material and Human Resources | WM | Description |
|------------------------------|----|-------------|
| 1. Lack of Budget | 3.11 | Agree |
| 2. No computer or laptop. | 2.18 | Disagree |
| 3. No printer. | 2.45 | Disagree |
| 4. Insufficient reference materials (journals, books, reports, etc.) | 3.03 | Agree |
| 5. Lack of training or seminar-workshop on research activities | 2.76 | Agree |
| 6. Lack of moral support from the principal. | 2.31 | Disagree |
| 7. No coaching with other teacher. | 2.43 | Disagree |
| **Average Weighted Mean** | **2.61** | **Agree** |

Based on Table 5, the general WAM of (2.61 or agree) indicated that all the surveyed respondents agreed that resources also hindered participating in Action Research. When it comes to material resources, lack of budget (3.11 WM or agree) received the highest response, while having no computer and laptop (2.18 WM or disagree) received the least response. Vasquez (2017) revealed that financial support is one of the problems that hinder teachers from doing research.

When it comes to human resources, lack of training or seminar-workshop on research activities (2.76 WM or agree) got the highest response. Since action research was one of the powerful tools for professional development, Gonong (2018), as cited from the findings of the
World Bank (2014), stated that a large portion of teachers felt they needed more opportunities in terms of professional training and learning. Thus, they need to update themselves on activities that will help them perform their functions.

Based on the above-mentioned findings, it can be further concluded that teachers’ budgets for action research making were personally funded from their salary. Encoding and printing of the manuscripts, together with the crafting and distribution of intervention materials, were all personally shouldered by teacher-researchers.

CONCLUSION

Generally, the analysis of the survey questionnaire revealed that 32 out of 38 items fell on the competent scale. It was noted that their weighted mean was at the lower part of the competent bracket. Four items in the survey questionnaire have a less competent description (skills in data analysis and interpretation), while the remaining two were in terms of publication of the completed research. Findings revealed that competencies with low WAM ratings should be mastered through capability-building activities.

Some of the barriers that hinder the engagement of teachers in action research making our knowledge, attitude, and resource factors. Misunderstanding the benefits of action research has the highest WAM in terms of knowledge barriers. Less appreciation of the usefulness of action research in enhancing instruction has the highest WAM in terms of attitude barriers. Lack of budget has the greatest WAM in terms of resource barriers.

To remedy such issues and corners, it can be recommended that teachers may personally attend additional training and workshops that focus on the importance and benefits of action research and enhance competencies, specifically data analysis and publication of research. They (teachers) may share their research outputs in proper forums and/or plenums and publish them in local, national, and international journals. School administrators and faculty clubs may allot or solicit funds for teachers’ professional development, such as involvement in research writing, presenting, and publishing. District Supervisors may integrate the use of In-Service Training and LAC Sessions in the respective schools before each school year to empower teachers.

LIMITATIONS & FURTHER RESEARCH

The study focuses on the level of teachers’ competence in action research making and the factors that affect the engagement of teachers in action research writing. The study was limited only to 147 retrieved questionnaires from the elementary and secondary teachers from the second congressional district of Quezon Province, Philippines.

The researchers suggested that further research shall be conducted considering a larger of respondents and variation of locale. The researchers further suggest that other variables may be taken into consideration to find other data not covered in the study.

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