



Empowering Rural Science Teachers as Reflective and Action-Oriented Practitioners

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ABSTRACT

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Teachers are aware of the presence, nature, and extent of classroom problem that they experience in daily teaching but they are not empowered enough to solve them as they aim to address learning losses. Thus, this paper described the profile of rural secondary science teachers; identified their problems encountered in daily teaching; and formulated policy recommendations that could empower them to be a reflective and action-oriented practitioner. Using qualitative case research design, eleven science teachers were purposively chosen as informants and data gathered were analyzed thematically. Three of them specializes in Biology, General Science, and Physics while the other two specializes in Chemistry; four of them were teaching Science in two or more grade levels; majority of science teachers were females; are Teachers I; and teaching experience of 0-5 years. Their problems meet was students' poor performance, unfavorable behavior in class and teachers' perceived difficulty. With these findings, the researcher recommends empowering teachers by developing their skills as reflective teachers and as classroom action researchers which could be strengthened by involving them in planning and designing professional development program, extending its implementation and evaluation in classrooms and by being part of a collaborative learning community.

KEYWORDS:

empowering teachers, reflective teachers, action researchers

INTRODUCTION

Educational systems worldwide continue to fall short of their own curricular requirements because of cumulative learning gaps over time. This is because, the exceedingly complex curriculum dictates the pace of classroom instruction, rather than the rate at which students are learning. In many nations, this implies that educators are forced to disregard learners who are falling behind (World Bank Group 2018, 22). Such practice results to the global learning crisis, often known as learning poverty that hindered efforts to develop human capital. As the pandemic forced the widespread closure of schools across the world, this educational crisis that was present even before COVID-19 widens continuously and makes the goal to reduce learning poverty even by half by 2030 become even more challenging (World Economic Forum 2020).

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Conventional methods of problem-solving, such as centralized decision-making and letting few lead a greater number of people are already outmoded. Compliance, simple rule-following, or doing what we have always done are no longer an option (ashoka.org 2017). Moreover, the attempt to make up for learners' lack of prior knowledge by trying to maintain them in their age-appropriate grade level while trying to catch up on what they have missed has not been successful (UNESCO, 2021). In the context of more diverse classrooms, teachers need to be well-equipped, encouraged, and given the power to make up for lost learning. However, without well-trained, valued, and empowered teachers, there will be no learning recovery (OECD, UNESCO, UNICEF, and World Bank 2022).

Everyone should concede that the improvement of student accomplishment depends heavily on teachers' professional growth and empowerment. However, lack of access to quality and suitable professional development is widely reported as the main reason for teachers' low engagement in such (OECD 2009, 48). This reduces the impact teachers can have on student learning and leaves them less prepared to effectively serve their students, school, and communities (Washington 2019). Correspondingly, the reported high percentage of

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teachers engaged in a wide range of professional development activities does not match with the same level of the teachers' intensity of participation (OECD 2009, 52-57). This happens when teachers feel disenfranchised, undervalued, and unfulfilled when they were required to take part in training that has no impact on their professional career or offers no chance for collaboration.

Although there is evidence that professional learning improves outcomes for teachers and students, teachers may feel that they lack the knowledge and abilities to do this at various levels of the system (King 2022, 171). This means that going back to the way things were before should not be done anymore. Education systems must exert effort to recover the learning losses and inequalities that were made worse by two years of distance learning while also bringing education into a better normal where all students can succeed, no matter what their circumstances.

With the abovementioned situation, this paper aims to: (1) describe the profile of rural secondary science teachers; (2) identify their problems encountered in daily teaching; (3) identify the possible cause of the problems; and (4) formulate policy recommendations that could benefit the teachers, students, and school as a community.

METHODOLOGY

Participants in this qualitative case research study were eleven (11) science teachers purposively chosen as they all handle science subject for the school year 2022-2023. Instruments used was interview schedule of two parts. Part A determined the participants profile as to sex, specialization, grade level taught, teaching position and years in teaching while part B identifies the problems encountered by teachers in their daily teaching after the pandemic. The data gathered were transcribed and coded to arrive at a certain theme and analyzed thematically.

RESULTS AND DISCUSSION

Rural Science Teachers' Profile. The profile of science teachers adds relevant meaning to the other findings of this study. These includes their sex, specialization, grade level taught, position, and years in teaching. These findings could be of support and validation to their problems met in daily teaching.

Sex. Majority of science teachers were females, proving that there are more female than male in the profession of teaching (Laguatan & Abad 2019, 241; Salvan & Hambre 2020, 129; Bogo & Aperocho 2023, 196). This means that the performance of teaching job, is more attractive job for women than for men. This domination of females in teaching could be attributed to the fact that teaching profession requires motherly affection which is possessed by female teachers alone.

Specialization. There are three (3) teachers that specializes in Biology, General Science, and Physics respectively. The

other two (2) teachers specialize in Chemistry. The lesser number of teachers who specializes in Chemistry suggest that Chemistry is less attractive to be taken up by those who are pursuing teaching as a profession. Thus, resulting in unequal distribution of specialization and teaching loads which could be affect in the extent and number of problem that the teachers encounter in their daily teaching.

Grade Level Taught. Four (4) of the informants teaches Science 7, three (3) teaches Science 8, three (3) teaches Science 9 and the other three (3) teaches Science 10. Four (4) of them were teaching Science in two or more grade levels. There are more grade 7 science teachers than other grade level teachers because two (2) of them handles science in other grade levels and the other 1 teaches other non-science subject. Handling and teaching science in two grade levels implies greater number or higher extent of classroom problems met because it would entail teacher's hard work and time management skills. For example, one teacher who is assigned to teach 5 classes of the same grade level will prepare only 1 lesson every day. But, if the teacher is assigned to teach science in two different grade level, he or she will prepare two lesson every day. This could mean devoting more time and effort in preparing lesson and instructional materials every single day. In some instances, these topics could not be the teacher's specialization thus, he will be rendering much effort in mastering the topic to be taught the next day. This might be a factor in the emergence of different problems that teachers encounter.

Position. Seven (7) of them are Teacher I and two (2) are Teacher II. The remaining two (2) are Teacher III. There were more Teachers I than Teachers II and III. The result of this study is like the findings established in the study conducted by Bogo & Aperocho (2023, 196) that most science teachers are in teaching positions I, and by Laguatan & Abad (2023, 241) revealing that majority of the Science teachers are Teacher I and some are Teacher II. This means that career advancement is not the priority of science teachers. However, this greater number of teacher 1 positions than teacher 2 and 3 positions could be attributed by their years in teaching since science teachers with teacher III positions are those teachers who have more than 5 years of teaching experience.

Years in Teaching. Seven (7) teachers have 0-5 years teaching experience, and three (3) teachers have 6-10 years teaching experience. Only one (1) have 16-20 years of teaching experience. Most of the science teachers have 0-5 years teaching experience. This result is like the findings of the study conducted by Bogo & Aperocho (2023,196) when they determined that most of the science teachers have an average tenure of less than 10 years, and those of Laguatan & Abad (2019, 241) saying that most of the teacher-respondents are serving for below 5 years and 5 to 10 years. This imply that majority of the science teachers are still new in the teaching career. In the context of the present study, this implies that they may not have yet the necessary experience and

knowledge to comprehend the intricate links among management, behavior, and academic duties. Thus, they may experience great number of problems than those teachers who are teaching for more than 10 years. A link between position and number of years in teaching of science teachers was also established. Most of the teachers who have 0-10 years in the service are Teacher I while those teachers who have teacher II or Teacher II position have 10 or more years in teaching. It implies that science teachers with higher number of years in teaching were most likely to advance in their professional career and be promoted.

Problems Encountered by Rural Science Teachers. The identification of classrooms problems by the science teachers will be relevant in formulating policy recommendations by establishing their needs along professional development and the type of professional development program that will equip them with knowledge and skills so that they can be empowered to solve their classroom problem. Along classroom problems, three main themes have emerged. These are students' low performance in science, students' unfavorable behavior in class, and teacher's perceived difficulty in handling the class. This was shown in table 1.

Students' poor performance in Science. Though informants they have several descriptions of how their students perform in science class, they all agree that one major problem found in classroom is the students' poor performance in the subject. As informant 3 said:

[They do not perform well in class, for example, during recitation they seem hesitant. During evaluation test, they get low scores.]

Here the teacher described the passive behavior of students during discussion in science class. Some students do not respond despite of teacher's effort in involving them in the discussion. Similar experience was shared by another teacher.

As informant 8 said:

[...their achievements are very low, only those students who shows interest during discussion are the ones who get good scores during evaluation tests.]

The teacher identified the decline of students' interest as the possible cause of poor performance. This is alarming as it affects the students' performance in science. Another teacher has the same experience. Informant 10 said:

[They seem to be active during discussion and they could understand the lesson, but the problem is, when you give them a quiz the following day, they get low scores.]

The informant described the tendency of the students to forgot concepts after a day which caused their poor performance. It seems that retention of concepts taught by the teacher are easily forgotten by the students.

The preceding statements of the informants confirm what was stated by Gupta (2017) that students' low performance in class is widely documented across the schools worldwide; and by Blouin (2021) saying that academic performance of students was at the top of the teachers' list of classroom concerns. Moreover, the findings in the present study confirmed the survey conducted by *TeacherVision* when 68.7 % of respondents agreed that students' performance would be the main challenge for teachers after the pandemic (Shannon 2022). This implies that poor performance of students is common to science classroom in the school where the study was conducted. This also implies that regardless of identified cause of the poor performance of students in science, teachers should take initiatives in finding ways to rectify this problem and initiate investigations that could identify causes of such problem.

Students' unfavorable behavior in class. Another problem identified by the teachers is the students' unfavorable behavior in class. They have cited some instances where students shown disrespect to authority and noisiness. Informant 3 said:

[They lack in showing good manners-like when they come to class late, they just get in without even saying good morning, unlike before.]

Here, the teacher describes an instance on how students seem to forget to correctly address authority. Showing good manners as they enter or leave their respective classroom in the presence of their teacher were not exhibited anymore. The situation was even compared to the behavior of students before the pandemic. Similar experience was shared by another informant. Informant 8 said:

[Students are talking while you are discussing. They have no interest, disrespectful and they are too focused on their cellphones during classes.]

The scenario stated by informant 8 show how the students give full attention to other things like using gadgets other than listening to the teacher. This being inattentive to class discussion was identified as cause of low achievement score of students. Informant 10 share the same situation in her class. Informant 10 said:

[I cannot control the student's behavior. They are very noisy. Sometimes I do not know any more how to teach and discipline them. After all the reminders and disciplining I do, they still show the same behavior.]

The informant gets frustrated on how unmanageable the class is. She even blames herself why the students behave as she described. Hopelessness was expressed as if there is no more that she can do to alter the situation.

The informant's statements find support to what was stated by Gupta (2017) that behavioral problems like disrespectful

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attitude is one of the classroom problems that the teacher may face; and by (Blouin 2021) that these diverse behavior in classrooms continue to climb in rank. Moreover, the findings in the present study confirmed the survey conducted by TeacherVision when 58.3% of respondents agree that students' behavior would be one of the main challenges for teachers after the pandemic (Shannon 2022). In addition, the result of this study is related to what was found out by Pelo, Bonquin, Dasco, Gonhuran, San Juan & Teodoro (2023, 60) that Grade 10 students display inappropriate behavior of cell phone use and noise in the classroom next to absenteeism and tardiness. Further, this also affirmed by the result of the study conducted by Mumary Songbatumis (2017, 61), as one teacher-participant in study argued that teaching goal could not be achieved one hundred percent because while explaining a certain topic, the teaching process was interrupted by students who were busy in talking and doing other things. The findings imply that students' unfavorable behavior in science class pose a great challenge for science teachers as it causes disruptions in the classroom that could hamper the achievement of learning goals. This means that the teachers must find ways on how to address the problem by reviewing their teaching techniques and classroom management procedures or subjecting themselves in professional development to gain skills and knowledge on how to solve such.

Possible cause of classroom problems. Another problem that emerged is the teacher's difficulty in handling classes in science. Subthemes under this were lack of experience, trainings, skills, and knowledge on how to manage the class; difficulty in managing the class; inappropriate teaching approach/strategies used; and need of support from others. The themes shown in table 1 validates the need of the teachers to be equipped with necessary competencies that will enable them to be a problem solver in their own classroom. Their thoughts are herein presented:

Lack of experience, trainings, skills, and knowledge on how to manage the class. One subtheme that emerged is the teachers' acceptance on their lack of experience, trainings, skills, and knowledge in handling and managing diverse types of learners. Sentiments of informants in this concern are presented below.

Informant 1 said:

[But I do not know if I can, because I need more experience, more trainings, or seminars. I need additional knowledge on how to deal with the classroom problems.]

In the statement, the informant doubted her ability to solve her classroom problem. However, she understands that gaining more experience and training will equip her to do so. Another informant shared her thought on similar concern. Informant 4 said:

[I still need some learnings; I admit I am not that person who can do anything. I still

need some assistance, experiences, benchmarking, observation from other cases. I still need trainings.]

Accepting the fact that she cannot solve her problems alone, the teacher expresses her need of help and support from other individual. She confirmed her need for training to be a problem solver. Informant 11 said:

[I have not reached that level of being an excellent teacher. I still must improve as a teacher. I accept that I still need training and experience.]

The teacher expressed that she still needs to improve. This can only happen through experience and trainings as what was confessed by informant 3 below. Informant 3 said:

[I still need support, additional learnings, trainings, and seminars (for me) to improve.]

Aside from trainings, the teacher mentioned the need for support of other individual. This could be in a form of technical assistance from a mentor or providing support of resources from a school administration.

These statements of informants as confirmation of their lack of knowledge and their need to be equipped with skills in solving their identified problems. Their need for support from other individual was also added by other informants. This suggest that science teachers need professional development training on solving their classroom problem on poor performance and unfavorable behavior of students and that they cannot do the task alone as everyone is responsible for the students' welfare.

Similar results were established in the study conducted by Mumary Songbatumis in 2017 (p. 60-63), concluding that teachers were challenged by their lack of training, limited mastery of teaching methods, lack of IT experience, a lack of professional growth, limited facilities and resources, and time constraint.

These statements could be a direct reason why their problems are present in the first place. Hence, teachers should acquire expertise in specific field so that they can successfully effect change. This could be in the form of professional development program. Moreover, their awareness of their critical role as educators, as well as the importance of constantly improving and updating their knowledge is the start of their empowerment.

Inappropriate teaching approach/strategies used. The teachers also identified the inappropriate and inappropriate use of teaching approach and strategies as classroom problem they encountered in holding science classes. Informants expressed their thoughts about this concern. Informant 10 said:

[The cause could be teacher factor. The process I used in teaching, maybe it is not that consistent.]

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The informant considered herself as contributing factor to the unfavorable behavior and poor performance of her students. Some teachers do not know what approach to use due to individual differences and interests of students in their class. Informant 8 said:

[The strategies we use is used in the whole class. Maybe it is not applicable anymore.]

The teacher expressed that the strategy implemented in the whole class could only be useful to some students but not to others. This strengthens the fact that there is no “one-size-fits-all” strategy in learning.

Similar sentiment was highlighted by participants in Rayala’s (2022, 67-69) study saying that inadequate teacher preparation is closely tied to obsolete instructional models. Further, results of Rayala’s (2022, 64-70) study has similar claims on the context of teacher’s perceived difficulty in teaching such as inadequate teacher training, outdated instructional models, overly standardized instruction and assessment, and lack of resources. The respondents of Deniega & Magnaye (2022, 181) also said that no matter how much effort they give to empower themselves in the classroom, things fail due to obstacles like management, class interruptions, and extracurricular activities. Though problems identified from these studies were different from the present study, they all support the idea that teachers face challenges in classrooms that hinder them in performing their job.

These imply that classroom problems exist because teachers do not know how to respond to or solve it. They do not have the skills and knowledge on how to properly conduct problem-solving techniques which is an essential part of teaching job. Thus, the teachers must subject themselves to a professional development program that can empower them to solve their classroom problems.

According to Zimmerman (2000, 47), empowering processes are those in which one manages to take charge, acquire the resources needed, and develop a critical understanding of one’s situation. This is essential in achieving empowering outcome. In CTVS, the teacher’s ability to understand their classroom situation and their acknowledgement of their lack of knowledge and skills in addressing give them a sense of understanding of the situation that they are in. This instance is essential as entry point in empowering process to achieve the desired empowering outcome.

Policy Recommendations. In this qualitative study, the profile and classroom problems encountered by rural science teachers were determined. Their identified classroom problems and their acknowledgement of their lack of skills and training to solve them suggests that there is a need to equip them with skills and knowledge to do so. Thus, policy recommendations are hereby formulated that could empower them as reflective and action-oriented practitioners. This policy recommendation focuses on the strength of reflective teaching and action research in solving daily challenges by the teachers. Reflective teaching enables the teacher to “look

back” on how the teaching goes, its setbacks and its successes and if learning took place. This may allow teachers to immediately act and change something to the teaching process that improves practice. This may empower teacher to be open for self-evaluation and be reflective on the outcome of their daily practice in classroom (Rayala 2022, 82; Morales et al. 2021, 201), as they understand more about their teaching methods and how students were learning (Tursini 2019, 772-774). Collaboratively, teachers could learn from and be challenged by each other as they share experiences (Johannesson 2022 418-419; Munson 2020, 68). Teachers may also be empowered as they gain expertise in doing action research even though they do not have any experience in conducting it (Tursini 2019, 774; Fajardo & Digo 2023, 338; Johannesson 2022, 417-418), and regarded AR as time consuming and difficult. Through AR workshops, steps are made a bit easy, new learnings about the nature of social science and research in education are gained, (Digo & Labor 2022, 48) as they became more innovative and evaluative of their practices in the classrooms which they regarded as essential in equipping them to solve daily life problems (Fajardo and Digo 2023, 342-343). Action research takes a huge part in promoting a research-based education and develops teacher’s value for evidence-based instruction (Bergmark 2022, 437), absorbing a clearer understanding on how to plan and carry out classroom intervention to solve problems they encountered and improve educational practices. Enhancing practice through action research needs skill of reflection making them as a powerful tool for effecting change in classrooms. The importance of reflection to action research is important as one thinks back on and analyzes own practice while able to do research to understand one’s own practice to learn from it and to improve learning (Johannesson 2022, 422; Bergmark 2022, 437). This means that engaging teachers in action research activities enable them to gather crucial information about their teaching practice and students’ learning that empowers them to act and effect change.

Teachers can be empowered by developing their skills as reflective teachers. Being a reflective teacher entails bravery to look upon own’s practice, ask and answer questions about it, examine its effect to the students’ learning and make necessary adjustment immediately. In the process, a reflective teacher can improve his or her practice as she or he solve classroom problem. Murray (2010, 4-5) suggested individual and collaborative techniques that teachers might engaged themselves in. Individually, commenting in own’s teaching practice and putting it in own’s journal enable teacher to be aware of how a lesson goes wrong or right and how it affects the students’ learning. Collaboratively, a teacher can share journal with a colleague, ask comments or answer questions that might be thrown to them. Being able to receive objective comments from a colleague boost teacher’s confidence and empowers them in addressing classroom challenges knowing

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that there is someone who understands them and even share the same sentiments and experience. Taking into consideration the factors that make the lesson successful or not, such as teacher-learner interaction, teacher's thoughts, and feelings regarding the lesson and with insights from colleagues in the profession can guide the teacher on what he or she will do in the next meeting with their class. With a particular goal in mind, the journal that contains self-reflection and comments from others will give the teacher a direction on the future teaching plans. The process might be exhausting but with patience and determination, mastery could be achieved as teaching patterns is observed, giving clear direction to the teacher on what to do next time. These reflective teaching techniques, could be simulated in a PDP to guide the teachers in each step on journal writing, asking, and giving feedback from a colleague and planning for the next lesson as an improvement of the previous. In doing so, they can be empowered to change their practice according to the need of their learners while solving their own classroom problems.

Teachers can be empowered by developing their skills as classroom action researchers. Action research is often regarded by teachers as difficult process to accomplish as its effects would not be seen right away despite the urgency of the issues in the classroom. Teachers are not attracted to engage in it because it may require expertise in statistics and in language. Thus, teachers' level of participation in PDP that involves AR process decline and their enthusiasm in improving their skills to be a problem-solvers could be outshined by these thoughts. Hence, strategies should be done to reverse it by stressing that AR is not difficult, rather the most systematic method teachers can use to address challenges they may face in the classroom in which completion depends on the urgency and the scope of problem that ought to be solved.

It must be emphasized that action research is the most effective way to solve classroom problem as it is data driven. Meaning, intervention implemented is always based on assessed classroom situation observed by the teacher themselves. Further, it is most likely to be successful in improving students' learning and classroom situation as the purpose is defined by the teacher alone. In this context, the teacher-researcher can immediately adjust to changes that it may bring to the class because she or he knows the reason and purpose of the change that is about to happen in the first place. To lessen the feeling of anxiousness on the part of the teacher, learning community could be formed while teachers learn about action research during PDP and during actual conduct of action research. This could be a group of teachers who are experiencing common classroom problem or teachers having same goal of improving students' learning and performance. In this strategy, teachers who participate can build a common set of skills that are relevant to both the needs of the community and methods of action research. This, to be

successful, must take into consideration the alignment of individual teachers' objective to schools aims.

Teachers can be empowered by involving them in planning and designing professional development program. It is seldom that teachers were asked on what the training they really need. Often, they were obligated to join and participate in a professional program that they hope will improve their skill and knowledge in handling classroom situation, but this does not happen. Think of how a teacher will feel involved and important if their opinion was valued. The importance of involving teachers in planning professional development programs that they should engage in gave them the independence to select, decide and take actions for themselves and for their students. Giving them authority and accountability in their respective disciplines is a form of empowerment.

Teacher's confidence increase as their thoughts and ideas are recognized. This can bring amazing result and can really create an environment where participation and making an output does not seem to be obligatory. Participants will be engaged in the activities, complete all the tasks on time and learn at the same time. This will be far from their participation in previous "one size fits all" PDPs' where expected outputs become "take home assignments."

Teachers can be empowered by extending the implementation and evaluation of PDP in their own classrooms. Program implementation of PDP must be given focus as much as what was given to its conceptualization and evaluation. In other words, schools should be serious in planning, implementing, and evaluating professional development programs instead of just conducting them for compliance. Any learnings gained from PDP should be extended its implementation and evaluation inside the classroom wherein the effect that is aimed is dreamt to be observed. This could be directly detected on how well the students are learning and/or behaving as visible and tangible effect of application of teachers' learning and change in practice.

In this context, enough duration of time should be allocated for the implementation and evaluation of the program to see result/effect of PDP. Aside from usual interview or survey that aims to determine how the teachers apply their learning and the change in perception and attitude of teachers after each PDP, actual classroom observation could be done during actual teaching and learning activities. The role of mentors and coaches in the school takes in as they evaluate the extent of how teachers absorb knowledge and skills and put it into practice. Classroom observation should also be done regularly to erase the idea that is done to pressure teacher-practitioners thus burdening them to prepare good if not best lesson. In the researchers view, classroom observation if done in the manner that a teacher is given technical assistance and objective comments that highlights their strengths and give suggestions to their weaknesses will empower them to religiously plan good lesson. In the process, preparing daily

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lesson will not be a burden anymore and observers during lesson will just be as normal.

Professional Development Programs for teachers should have an adequate time intended for evaluation of the learnings gained by its participants. If participants may allow, this could be accompanied with classroom observation, before and after the conduct of PDP to see first-hand, actual, and authentic results on the learner's progress in learning and in changing their behavior to favorable one. Similarly, this could be a great opportunity to align PDP's objectives and topics on the Professional Standard for Teachers (PPST) objectives to further support the teachers along each indicator. If this happens, not just the empowerment of teachers in solving their classroom problem will be achieved but also the mastery of the skills and competencies indicated in the PPST, which also the basis of rating the teachers' performance at the end of every school year. Thus, more teachers will be rated outstanding in their yearly performance.

In case of conducting action research as part of PDP, up until each informant has finished an actual action research project, a PDP should be continued. To providing technical assistance, coaching, and mentoring sessions, it will be more successful if the informants are assembled in a collegial conversation occasionally. This will track their progress in acquiring the skill and finishing an actual action research project that will go through proposal writing, proposal approval, intervention implementation, writing and completing action research paper, and disseminating its results.

Teachers can be empowered by being part of a collaborative learning community. Community of learning within teachers is an ideal environment for empowering teachers through growth and innovation. Being consist of a novice and expert in a group, the latter may serve as source of knowledge that challenge the thoughts of the former. Sharing of experiences and the results of what they have done in their own classrooms and reflecting with own's practice may allow the participants to learn from one another. Specifically, between teachers who have a huge difference in years in teaching novice in the profession are given the support and enable to learn new ways to be effective in their task. When done objectively and without judgement to one or other's failure as a teacher, environment of impartiality comes in and willingness to confer their mistakes openly invite appreciation and mood of relaxed atmosphere. Collaboration as part of professional practice enable teachers to be more open to new ideas and began to reconsider their existing approaches to instruction. Further, a support system, like a peer or mentor, is essential to achieving goals as technical skills and assistance were provided to anyone who becomes expressive of their thoughts and in wanting to change their practice.

The process of collaborative learning that teachers could engage in may be adapted from Project-Based Learning

(PBL) that was proven successful in capacitating students in solving problems on local and global concerns. The process of engaging students in project-based, experiential learning in their classroom and community while addressing large-scale global issues (Chachine, 2023) could also be applied by the informants in their own classrooms. Their firsthand exposure to the relationship between unique educational experiences and general ones is an advantage and had promising result. This could be attributed to the learnings as they discuss, share ideas, and talks about research. Similarly, teachers could also start their collaborative discussion with problems rather than solutions to their classroom problems, and gain knowledge, skills, and comprehension through a tier-by tier progression of problems that are presented in order and that could be related to each other.

CONCLUSION

Based on the findings, it was established that science teachers' sex, specialization, and position, has nothing to do with their classroom problems met. However, grade level taught and years in teaching could be a contributing factor to their classroom problems encountered. Teachers who have below 10 years in the service and those who are assigned to teach science in two grade levels will most likely feel lost in controlling the class. They are the teachers who often complains about students' low performance and unfavorable behavior in class. These teachers may not have yet the necessary experience and knowledge to grasp the complex links among classroom management, students' behavior, and their academic duties thus, experiencing a great number of classroom problems than those teachers who are teaching for more than 10 years. Rural science teachers encounter classroom problem such as students' poor performance in science, students' unfavorable behavior in science class and teacher's perceived difficulty. These difficulties were specifically described by the informants as lack of experience, trainings, skills, and knowledge on how to manage the class and inappropriate teaching approach/strategies used. These classroom problems are imminent in the science classrooms because the teachers do not have the necessary experience in handling diverse type of learners and expertise on what method and process to employ in solving their own classroom problems as indicated by their acknowledgement of their need for training in addressing such problems.

Rural science teachers can be empowered by developing their skills as reflective teachers and action research practitioners. They can also be empowered by involving them in planning and designing professional development program and by extending the implementation and evaluation of PDP that involves reflective teaching and action research in their own classrooms.

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