Blended Professional Learning Community Sessions on Action Research

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Abstract

Action Research (AR) has shown a significant contribution toward improving teacher practice. Challenges in its conduct have led to teachers' struggle in completing such projects. Professional Learning Communities (PLC) had created an improvement in participatory transformation in teaching through collaborative learner-centered solution-making. Thus, the Action Research Professional Learning Community named "*SAHA*" was formed to address the gap. Teacher-members in Catanduanes National High School (N=15) participated in the blended sessions (synchronous and asynchronous) to improve their capacities in conducting Action Research (AR). The framework for training AR employed the Plan-Do-Study-Act (PDSA) model and a descriptive mixed-method approach was used. ARPLC members' experiences culled from interviews, focus group discussions, open-ended questionnaires, and journal logs were thematically analyzed. The Perception on Action Research Questionnaire (PARQ) was used to measure AR competence at the end of the training. The ARPLC experience showed positive effects on the teachers' attitude and understanding of AR as depicted in their improved collaboration and reflective thinking skills.

Keywords: Professional Learning Communities, Action Research, Action Research Competence, Conducting Action Research, Professional Development, Teacher Training

Introduction

Training teachers on the conduct of Action Research (AR) is of prime importance in improving professional practice. It has been revealed that AR may be a part of Professional Learning Communities (PLC) (Ahlawat, 2015; Mamlok-Naaman, 2018) that encourage collaboration through inquiry into refining teaching practice. AR practices investigation on a pragmatic view of teaching by testing new solutions to problems (Clark et al., 2020). Thus, teachers must be capacitated on the conduct of AR. In this study, we will describe the experiences of teacher participants during the training and the competencies developed after.

Action research is a research methodology that aims in improving one's professional practice by attaining self-awareness in achieving positive change (Brydon-Miller et al., 2022; Magalong & Prudente, 2020; Prudente & Aguja, 2017). Klima (2020) showed AR's impact on professional development where it was revealed that shared leadership is developed as participants shared accountability towards their respective projects. It is also to note that the affective aspect is developed through a reflection of the progress that shows AR's contribution to the teacher's professional growth and developing a solution framework for implementing interventions to encountered problems (Erro-Garcés & Alfaro-Tanco, 2020). Additionally, AR practice improved relationships and management within the practicing organizations (Ollila & Yström, 2020).

Professional Learning Communities have anchored on the social learning theory wherein the researchers believe that encouraging interaction among teachers about their learnings in the sessions can create knowledge and meaningful constructs on learning (Brodie & Chimhande, 2020; Lave & Wenger, 1991; Wennergren & Blossing, 2015). DuFour (2015) expands that PLC is all about the individuals sharing a common practice and process that entails improving learner of all learners thus a sustainable system of practice should be established and continuously require testing and evolution to fully achieve its primary goal (DuFour & Fullan, 2013). Understanding learning is a result of developing collaboration of ideas among individuals trying to achieve their goals. This introduces teachers to an atmosphere of shared interest and identity that leads toward a commitment to the cause of the PLC (Wenger, 2011). Penuel et al. (2017) would further conclude that the diversity of the community should be considered as a benefit towards the enrichment of learning as dictated by the theory. They further iterate that the differences presented in the social learning environment should be considered as an opportunity to understand adapting and create solutions in practice.

The Philippine Department of Education institutionalizes as presented in its mission on improving learning and pedagogy through research and development. DepEd Order number 39 (2016) presents the adoption of a departmentwide research agenda to support the need for evidence-based decision-making for the department. It advocates solving challenges faced in teaching and learning, child protection, human resource development, and governance through research. The ultimate goal is to respond to the gaps in the system through research-backed decision-making (DepEd Order No. 16, series 2017). Submitted papers go through intensive screening through a committee that checks whether the paper fits DepEd's priority initiatives for innovation (DepEd Order No. 16 Research Management Guidelines, 2017). As a result, technical assistance would be provided by the department to potential teacher researchers.

This led to its induction to Catanduanes National High School, a local Mega-Category high school in the Catanduanes Island, Philippines, as part of its program in achieving 2 primary

goals: First, is to be able to foster a sustainable community that would tackle problems among learners through collaboration, and Second, increase participation in AR outputs in the said school. This was driven by national policies of the education department and the recent statistics of low turnout of AR in the school despite being a large institution. Hence, *SAHA* (a local word for 'sprout) was introduced as an Action Research Professional Learning Community (ARPLC) program focused on the conduct of AR during the pandemic. *SAHA* is a PLC that met online and in person which discussed the conduct of AR aligned to problems learners met during the pandemic. Sessions were conducted over 13 weeks where teacher perception of AR and experience with *SAHA* was probed using a mixed-method design.

Methods

The goal of the *SAHA* is to develop reflective teachers through blended sessions (Face-to-Face and Online) that served as platforms for teachers to interact and support each other during the training process. The Plan-Do-Study-Act model was adapted in implementing this study. A collaborative action research design using a mixed-methods approach investigated the competencies and experiences of the teacher participants.

Creation of the Blended AR PLC

A request on the conduct of *SAHA* was sent and approved by the school administrators of Catanduanes National High School, and the Schools Division of Catanduanes. Letters of invitation among AR experts were sent to aid in sharing their practices in the conduct of AR. An open invitation for the first session was endorsed by the school principal with the condition that basic health protocols were followed. Volunteers walked in during the first session which determines the first participants of the PLC. During the first session, participants were introduced to one another and oriented on the PLC framework that will be used during the Blended PLC Sessions.

Blended AR PLC Framework

The blended approach framework adopted by this study is divided between face-to-face sessions and asynchronous sessions. Face-to-face and online synchronous sessions run for a minimum of 2 hours once every 3 weeks or earlier, depending on the availability of PLC members. Figure 1 presents the flow of the PLC session that occurred. In every session, a circulating teacher facilitated the discussion. The session properly involved invited lecturers and teacher-researchers from Catanduanes who have completed AR projects (Figure 1). Every synchronous session started with a recapping of the previous discussion which involved journal entries of the participants. Then, the teacher participants shared their experiences on their previous AR projects conducted. Afterward, the invited speakers discussed the processes involved in conducting AR. The session was designed to encourage discussion of ideas through "milestone questions". This is to gauge the understanding of teacher participants and reflect on how the learnings can be applied in their practice. A session workshop is done after the discussion to encourage practice and mentoring. Through *SAHA*, the teacher participants decided on the next goals and had discussions on what will be happening in the next session. To conclude the training, teacher participants provided feedback on their training experiences.
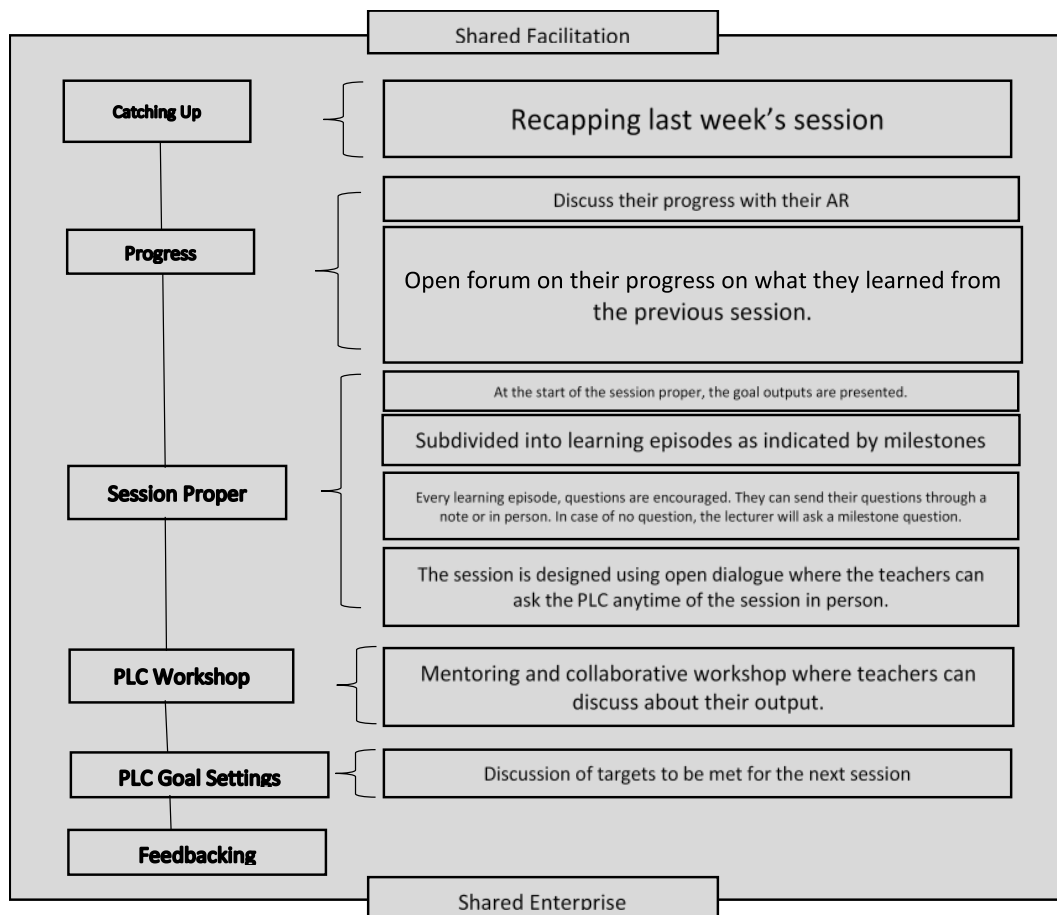
Figure 1. Synchronous Sessions

The asynchronous sessions were conducted through the use of two online tools using an online classroom through Google Classroom© and a dedicated communication line via a Messenger© Group Chat. The online classroom provides the recordings, materials, and announcements. It also serves as a discussion board among PLC members regarding their submissions. While the group chat serves as instant communication where PLC members are free to open up quick discussions and reminders in case members haven't seen the online classroom discussion board.

Quantitative Data Collection and Analysis

Quantitative data was collected through the use of google forms which includes the survey using the Perception on Action Research Questionnaire (PARQ) (Prudente & Aguja, 2017). The link to the survey was sent through the group chat and discussion board in the online classroom. The results were collected and recorded using a spreadsheet. Quantitative Data is collected through printed sheets of the tools used for gathering the responses of the teacher participants. Responses are then transferred to an electronic spreadsheet for checking and validation. Statistical analysis is then conducted with the use of a trial version of IBM's SPSS© software.

Qualitative Data Collection and Analysis

The first part is done online with the use of google forms which includes the survey using the Professional Learning Community Open-Ended Questionnaire (Yarbrough, 2010) which

collects qualitative responses regarding their SAHA experiences. The second part is the in-person collection part was conducted using a focus group discussion conducted at Catanduanes National High School. Questions asked in the discussion were adapted from the PLC Interview Focus Group Questions (Hoffman et al., 2009). Two FGD sessions were conducted accommodating the availability of the members. Each session runs for an average of two hours as requested by the teacher participants. The FGD is video recorded and then transcribed using a text editor. Additional qualitative data was extracted from the discussion board, group chat, and teacher participant journal notes.

To compile and analyze the qualitative data collected in this study, journals, recordings, and interview notes were used. Atlas.ti software is used to sort, code, triangulate, and arrange data. Thematic analysis protocol developed by Braun and Clark (2014; 2019) was used in the interpretation of qualitative data. Initial *In Vivo* (Saldaña, 2021) coding was used where afterward using the network facility of the software, a re-reading of the transcripts was done. A second coding used an Open approach where *In Vivo* codes are arranged again against the open coding. Initial themes were created and another rereading of the transcripts was conducted to further refine the themes emerging from the analysis. The validation method used with qualitative data is using triangulation of data from Professional Learning Community Open-Ended Questionnaire responses, FGD, interviews, discussion boards, online group chats, and teacher participant journal notes. Further validation was done through member checking (Carlson, 2010; Varpio et al., 2017).

Results and Discussion

Five PLC sessions were conducted within the planned given time. From the initial enlisted 22 teachers who attended the first session, at the following sessions till the end only 15 teachers remained in the training. Table 1 presents the demographic profile of the participants.

Details	f
Sex	
Male	3
Female	12
Position	
Special Science Teacher I	1
Teacher II	1
Teacher III	10
Master Teacher I	1
Master Teacher II	1
Assistant Principal	1
Department	
Junior High	2
Senior High	13
Major	
English	4
Filipino	2
Mathematics	4
Science	2
Technical Vocational	3

Table 1. Demographic Profile

Perceptions of Action Research

Action Research Principles

On the first component on perceptions towards AR principles, most of the items were positively perceived by the teacher-researchers except for the item on "An action plan is needed in trying out the improvement theory." as 7.70% of the teachers disagree with the item as presented in table 2. The average score garnered in this dimension is $\bar{X} = 3.59, \sigma = 0.514$.

Action Research Principles	SD%	D%	A%	SA%	$\bar{X}$	σ
Action research is done within the context of the teacher's environment.	0.00	0.00	30.77	69.23	3.67	0.49
Action research is a challenging endeavor	0.00	0.00	38.46	61.54	3.58	0.51
Action research aims to explain why we do things	0.00	0.00	46.15	53.85	3.5	0.52
Action research links educational theory with professional practice.	0.00	0.00	30.77	69.23	3.67	0.49
Action research is focused on studying one's practice brought about change.	0.00	0.00	38.46	61.54	3.58	0.51
Action research involves collaborative methods to generate data that inform changes in practice.	0.00	0.00	38.46	61.54	3.58	0.51
The conduct of action research is a good measure of the teacher's professional commitment.	0.00	0.00	38.46	61.54	3.58	0.51
An action plan is needed in trying out the improvement theory.	0.00	7.69	23.08	69.23	3.58	0.69
Results of action research studies should be shared and disseminated.	0.00	0.00	30.77	69.23	3.67	0.49

Table 2. Percentage of Responses on Action Research Principles

Attitudes toward doing Action

The calculated mean for this dimension is $\bar{X} = 3.16, \sigma = 0.84$ shows the general agreement on most of the items. Items marked with* are the negative items asked in the questionnaire. The first four items are agreed upon 100% by the teachers which probe into their positive attitude towards doing action on their practice of teaching through AR. Similarly, the same observations are seen with the item "Through action research, teachers become professional knowledge makers." and "I am convinced that doing action research can improve my teaching practice." However, item 7 which is a positive item presented mixed results. On "Teachers are given enough training on how to do action research.", more than half of the teacher trainee disagrees (Table 3).

Negative items also presented a different perception among the teachers. Items "Planning for future instruction is the end of the cycle for action research.* and "Teachers cannot find the time to do action research.*" presented more than 50% of the teachers disagree with the statements. While the item "The amount of work I do in school prevents me from doing action research.*" 77% of the teachers agree on this. Table 3 enumerates the detailed findings of this section.

Attitudes toward doing Action	SD%	D%	A%	SA%	$\bar{X}$	σ
I find enjoyment in trying out new things in teaching.	0.00	0.00	53.85	46.15	3.5	0.52
I believe that doing action research is part of my duties as a teacher.	0.00	0.00	38.46	61.54	3.67	0.49
I have a positive feeling that by doing action research, I can become a more effective teacher.	0.00	0.00	53.85	46.15	3.5	0.52
Doing action research can be emancipating for the teacher.	0.00	0.00	61.54	38.46	3.42	0.51
Planning for future instruction is the end of the cycle for action research.*	15.38	38.46	23.08	23.08	2.67	0.98
Teachers cannot find the time to do action research.*	23.08	38.46	23.08	15.38	2.42	0.99
Teachers are given enough training on how to do action research.	15.38	38.46	30.77	15.38	2.5	1.00
Through action research, teachers become professional knowledge-makers.	0.00	0.00	69.23	30.77	3.33	0.49
I am convinced that doing action research can improve my teaching practice.	0.00	0.00	38.46	61.54	3.67	0.49
The amount of work I do in school prevents me from doing action research.*	7.69	15.38	53.85	23.08	2.92	0.90

Table 3. *Percentage of Responses on Attitudes toward doing Action*

Processes Involved in Doing Action

Table 4 shows that 11 items were developed for this section where five items were framed negatively. Positive items 1, 7, 9, and 10 were 100% agreed upon by all of the teachers participating in the PLC. Other positive items received varied levels of agreement. For items 4 and 5, 7.69% of the teachers, or equivalent to 1 of the teachers do not agree on these items.

On the other hand, the negatively framed questions are not entirely disagreed with by the teachers. The item "A concept test is enough evidence to measure learners' understanding.*" showed sixty-one percent disagreement. However, the remaining negative items received an agreement rating of more than sixty percent. This dimension got a mean of $\bar{X} = 3.14, \sigma = 0.89$.

Attitudes toward doing Action	SD%	D%	A%	SA%	$\overline{X}$	σ
Action research starts with assessing the current situation.	0.00	0.00	53.85	46.15	100.0	0.00
Action research aims to investigate learners' behavior. *	7.69	23.08	46.15	23.08	69.23	30.77
Action research follows an iterative process.	7.69	0.00	61.54	30.77	92.31	7.69
Reflection is done in all the stages of the action research process.	0.00	7.69	23.08	69.23	92.31	7.69
A concept test is enough evidence to measure learners' understanding. *	15.38	46.15	30.77	7.69	38.46	61.54
In analyzing the effects of the action implemented, it is necessary to have quantitative data as evidence. *	7.69	23.08	46.15	23.08	69.23	30.77
Action research follows a linear process. *	7.69	30.77	23.08	38.46	61.54	38.46
The action plan is based on the root causes of the problem of practice.	0.00	0.00	53.85	46.15	100.0	0.00
Action research involves the implementation of predetermined answers. *	15.38	7.69	61.54	15.38	76.92	23.08
Action research improves educational processes through change.	0.00	0.00	46.15	53.85	100.0	0.00
Researchers doing action research articulate the process of reflection in their discussions to allow others to follow the sense-making processes.	0.00	0.00	30.77	69.23	100.0	0.00

Table 4. Percentage of Responses on Attitudes toward doing Action

Perception of Blended AR-PLC

Blended AR-PLC vs Traditional Faculty Meetings

Teacher participants pointed out in their responses that immediate differences between PLC and traditional faculty meetings (TFM). TFMs are described to focus on the organization and less urgency is given to pedagogical outcomes among learners.

> *[JT] PLCs talk about contents related to pedagogies most of the time while faculty meetings seldom do this. Faculty meetings are concerned more with organizational issues. [JT] PLCs talk about contents related to pedagogies most of the time while faculty meetings seldom do this. Faculty meetings are concerned more with organizational issues. [CC] PLCs are goal-driven and time-bounded while TFMs are lax. [CT] PLC is different from the regular meeting because it sets a community of practice toward achieving a group goal.*

Members had able to elaborate on the difference between PLC experiences with TFM. The responses of the members reflected the 'Big 3' principle (DuFour, 2015) wherein within the duration of the sessions, teachers had able to experience PLC's focus on learning through professional development, and collaborative discourse which able for teachers not only to participate but also contribute in a growing shared knowledge and enterprise.

PLCs created a distinct difference from TFMs as teachers are encouraged to be part of the solution process which empowers them to create new ways of teaching and learning based on what is happening within the different dimensions of the school (Stegall & Linton, 2012). This breaks away from an organizational or political-centric direction of discussions that is beyond the teacher's concern which causes disconnection of teachers to TFMs agenda and

transforms to a mutually shared responsibility to improve learner results through collaboration and AR activities where everyone is encouraged to be part of the discourse (Howard, 2022; Masson & Zajontz, 2022).

Building a Culture of Collaboration

All of the teacher members agreed on the nature of the PLC made them collaborate and establish partnerships forged during the session creating a sense of shared enterprise and culture as their identity. This is evident with the name they gave for the PLC, 'SAHA' which is Catanduanes word for 'Budding' or 'Sprouting' as they treat themselves as young sprouts of research which also shows the member's way of expressing their relationship with one another as a group (Kondo, 2019; Tam, 2022). The members further express how the exchange of ideas beyond AR comes from providing an accommodating environment among the teachers in the PLC (Gore & Rosser, 2020).

> *[JT] They eagerly shared their knowledge and expertise. [JM] A give-and-take process where you can freely learn something and input ideas as well. They mentor and share their inputs and their expertise during discussions and forums. [CS] I strongly agree that everyone's concerted effort is a must for its fruition. [JV] They shared their best practices and problems as well for the novice teacher. [NU] [Members] Based on their experiences with the problems they met in teaching their subject.*

Collaboration is exhibited with the nature of inclusion as teachers of all experience levels were accommodated and allowed members to be guided in AR. This created unique relationships among members that led to mentoring and new networks within the school which led to collegial trust among the members (Huijboom et al., 2021). Furthermore, it encourages motivation and continuous participation in the practice of PLC.

> *[JV] It is beneficial on my part as I see the possibilities of 'Oh this is how it works'. My old conception is that AR was difficult, only to realize it is not. So with Saha, most of my participation is I have realized it is not difficult and you don't need to be alone when conducting AR. So you will be guided by the Saha. So guided. This is what is missing [with TFM] that I liked with Saha. Because when I conduct my AR there's this group that can help me on the way and helps me to realize on things like JFT mentioned can improve student outcomes.*

The last sub-theme emerging in Building Culture of Collaboration is the willingness of the PLC teachers to engage in critical reflective thinking as a community (Gore & Rosser, 2020; Sæbø & Midtsundstad, 2022; Tam, 2022). As mentioned, all of the members are encouraged to share their experiences and outlook on the session which gives rise to reflection on practice among teachers.

> *[CC] Brainstorming ideas is productive and impactful. [RS] There is the pooling of ideas. We throw in questions: 'How do you conduct this' then someone will solicit their solutions. You may have solutions but you are in a dilemma on how to implement them since it is even a personal struggle with SAHA we were able to make it work. We can build our solutions and turn them into our own AR proposal.*

Focusing on Facts and Solutions

Approaching concerns on improving student learning, teachers discuss common problems that arise in the teaching-learning process. The PLC has been conceptualized as a teacher intervention that focuses on improving learner participation and learning as part of its goal during sessions (Moulakdi & Bouchamma, 2020). Similarly, the purpose of AR is to be able to improve teacher practice which results in better learners had been supported by the construct behind PLC (Gibbs et al., 2017; Puhakainen & Siponen, 2010).

> *[JT] It provided me with a strong foundation in conducting action research not just for the sake of innovation but making sense of the available data to come up with a strategy and solution to an immediate concern. [CG] Produce more action researches that will be beneficial to the students, school, and the community as a whole. [JFM] I encourage teachers to attend Saha because promotion-wise, they need to conduct AR, also it helps improve the teaching and learning process, especially during the pandemic. It helps such that small problems encountered are given additional interventions [nods head] which is great. So I told myself, ah, it [SAHA] benefits us in helping solve our problem on ICT [TVL course] during the pandemic, which requires the practice of the skill. So, Saha can provide an answer through AR. [CC] So the [classroom] problem is always considered however how we come up with solutions is a challenge. You need to think of a solution and it is difficult as you need to be specific on the breakdowns of how it is being developed. Through the sessions and being strict about data, we were guided on how to be better at designing interventions. [JV] We were recommended that we should consult the baseline data, which in turn we could think about how to use its leverage to our methodology. 'Oh,' then we realized it is possible to do this. Before we weren't aware of this, at least through Saha we were able to create ways how to use these available data to create action research.*

Furthermore, solutions are not one-dimensional due to the continuous input of the members had led to a deeper understanding of the importance of different disciplines and experiences in teaching and learning (Liu et al., 2022) through a positive culture (Henderson, 2018).

> *[ES] The beauty of the sessions is even though you are the one developing the [AR] proposal, the members can contribute to improving my solutions. [CC] We also have members who previously engaged in AR and based on their accomplishments, we can gather ideas to polish our work.*

Reflective

The session presented a reflective atmosphere as manifested by the responses of the teachers. Self-evaluation, realizations, and assessments are an indication of personal reflection which are both characteristics of AR (Brydon-Miller et al., 2022; Prudente & Aguja, 2017) and PLC (Çopur & Demirel, 2022; Sæbø & Midtsundstad, 2022). The reflective nature of the session also triggered self-regulation as they recognize their growth and needs in AR (Hsiao & Lin, 2022).

> *[JM] [The sessions] reminds us. Our present sessions make [sic] us reflect on what we should be our scope, and what steps we need to take as part of our process. With that, we are reminded of 'So today we talked on this' which in turn makes us think*

about what we could do better [in teaching]. I reflected on my capability as a teacher-researcher. [JOM] It made us develop our research skill and reflect it in teaching. [HV] I was able to come into a wider perspective about the things that I can do as a teacher.

Conclusion

Perception on Action Research showed that on average the members of the PLC agreed on the positive statements of the questionnaire. The action research principles dimension notably has members strongly agreeing on all the statements. This prevents the impact of the Blended PLC towards the understanding and correcting misconceptions of members towards the conduct of AR in the practice of teaching. However, some of the members are still struggling with the negative items as shown in the results which is further reflected in the qualitative analysis of the data.

Members had able to distinguish the difference between PLC to Traditional Faculty Meetings (TFM). They were able to establish a sense of shared commitment and responsibility in improving student learning through their experience of collaboration which led to a multidisciplinary approach to creating innovations. These innovations in turn abled the members to create their AR which is the main objective of the PLC. Teachers in the PLC focused on analyzing current data as the basis of their actions and improvements. Moreover, the reflective critical dialogue had been developed during the sessions among the members. Though the online component of the PLC had shown a positive contribution to members who are unable to catch up in some of the sessions, suggestions on improving the immersive experience were given. Lastly, challenges that are wished to be addressed by the members are the involvement of administrators in supporting members on their AR, monitoring, reassessing workloads, and financial support.

Acknowledgments

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