

## Addressing Instructional Gaps in K to 12 Science Teaching through Learning Action Cell (LAC)

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### Abstract

The predominant effect in the shift of curriculum to the K to 12 programs challenged the pedagogy, content, and knowledge of science teachers as well as the learning outcomes of students. In order to address the issue, the Department of Education (DepEd) through DepEd Order No. 35, s. 2016 tasked every public school to conduct Learning Action Cell (LAC) sessions. With the aid of collaboration guided by principal or assigned LAC leaders, teachers are grouped to give solutions to the prevailing problems of the school. Thus, the study generally aimed to evaluate the conduct of LAC sessions in selected public junior high schools in the City of Sta. Rosa, Laguna to address instructional gaps in K to 12 science teaching. A phenomenological research design was used in the study. Eleven science teachers were interviewed. The results yielded that needs assessment is being administered to the teachers, however, there are concerns with regards to the actual topics covered by LAC sessions. Science teachers unanimously appealed that content is the major problem due to the spiral progression of the K to 12 science curriculum. Science teachers recommended that LAC sessions should be according to the field of teaching load or specialization, not just the typical general session, in order to address individual group concerns of teachers.

Keywords: Learning Action Cell (LAC), instructional gaps, science teaching, pedagogy, K to 12 science curriculum

## Introduction

Teachers are considered as the key element to educational quality because they orchestrate instructional interactions with and between students around academic content. This kind of classroom interaction—in an ideal world—influences student learning (Nordstrum, 2016). The K to 12 curriculum which aims to improve the quality of education challenged the teachers to embrace the changes in the educational set up as a whole. It is then imperative that teachers take a big leap to further enrich their competencies. To have a successful implementation of the K to 12 curricula, educational institutions could begin by uncoupling the conflation between teachers and teaching that reflects instructional practices that teachers make use of to facilitate interactions among students including content and learning outcomes (Nordstrum, 2016). One of the challenges faced by science teachers is to give learning activities that will enhance the minimum competencies set by DepEd. However, the K to 12 science curriculum follows the spiral progression approach which is not in consonance in their field of specialization. Shifting methodology and teaching pedagogies in teaching Physics, Chemistry, Biology, and Integrated Science of teachers put them in a situation that needs to be addressed immediately. Organizing professional learning communities aid the teachers in the construction of new knowledge about content and instruction as well as in revising traditional beliefs and assumptions about education, community, teaching, and learning (Little, 2003) in order to adapt to the new framework of K to 12 education system. The Department of Education through DepEd Order No. 35, s. 2016 tasked every public school to conduct Learning Action Cell (LAC) sessions. With the aid of collaboration guided by principal or assigned LAC leaders, teachers are grouped to give solutions on the shared prevailing problems in the school. It is in a special note that LAC sessions should be school-based communities of practice that enhance positivism, thoughtfulness, and provides safe spaces for teachers. The policy in general aims to provide support for the continuing professional development of teachers.

Moreover, successful teaching is a result of the systematic use of appropriate strategies for delivering and assessing the learning objectives targeted for each lesson (UNESCO GMR 2014). It is emphasized that successful teachers: “1) possess a good grasp of content which they can consequently convert to sound learning objectives, 2) are able to select and implement the most effective instructional strategies and materials to teach the identified content objectives, 3) make instructional decisions on the basis of formative assessment results, 4) promote sincerely their students’ learning and holistic development, and 5) are professional and ethical in the conduct of their work” (Stronge, 2007). Good educational systems ensure that opportunities for both approaches to professional development programs are available and accessible to teachers (Whitehouse 2011). In addition, DepEd Order No. 35, s. 2016, “institutionalizes Learning Action Cells (LACs) that aim to develop and support successful teachers by nurturing their knowledge, attitudes, and competencies in terms of curriculum, instruction, and assessment in their work stations.” The policy has the following objectives of:

1. to improve the teaching-learning process that will lead to improving learning among the students;
2. to nurture successful teachers;
3. to enable teachers to support each other to continuously improve their content and pedagogical knowledge, practice, skills, and attitudes; and
4. to foster a professional collaborative spirit among school heads, teachers, and the community as a whole.

Likewise, LAC is directed towards helping the teachers in improving pedagogical content knowledge of the subject matter, skills, and attitudes based on the requirements of the given competencies stated in the K to 12 Science Curriculum. This program allows the teachers to work collaboratively, identify the problems and difficulties of teaching new subjects, and addressing gaps that are being identified in the implementation process. As part of the development, the program requires teachers to focus on adopting the key features of the K to 12 Basic Education Program. Enriching the competencies of the teachers in order to sustain the following: “(1) Learner diversity and student inclusion; (2) Content and Pedagogy of the K to 12 Basic Education Program; (3) Assessment and Reporting in the K to 12 Basic Education Program; (4) 21st Century Skills and ICT Integration in Instruction and Assessment; and (5) Curriculum Contextualization, Localization, and Indigenization.”

In carrying out LAC sessions, needs assessment to play a vital role in identifying the priorities and weak points of the faculty involved. In the public school system, National Competency-Based Teacher Standards (NCBTS), which defines effective teaching as being able to help all types of students who acquired the different learning goals in the curriculum. After a while, it is being replaced by Philippine Professional Standards for Teachers (PPST). The PPST shall be used as a basis for all learning and development programs for teachers to ensure that teachers are prepared in the proper implementation of the K to 12 Program. Part of all training is being done during LAC sessions.

Improvement of performance is particularly dependent on feedback (Eraut, 2000). Thus, it is essential to know how practices and activities were done during LAC sessions that are vital to the needs of the teachers. In order to crucially assess LAC sessions, researchers focused on the way LAC sessions are helping the teachers in increasing the levels of teacher quality and made an impact to improve the learning outcomes of the students. Similarly, the study checked how LAC sessions addressed instructional gaps in K to 12 Science teaching by identifying different challenges faced by science teachers and give recommendations to improve the current status of the public school system.

### Statement of the Problem

The study generally aimed to evaluate the conduct of LAC sessions in order to address instructional gaps in K to 12 science teaching through Learning Action Cell (LAC).

Specifically, the study sought to answer the following questions.

1. How do science teachers being involved in the processes (preparation, implementation, and evaluation) of LAC sessions?
2. What are the problems encountered by Science teachers in the implementation of the K to 12 curricula?
3. How do LAC sessions help science teachers improve in terms of the following:
  - A. content;
  - B. strategy; and
  - C. teaching-learning process?
4. What are the problems encountered by science teachers and administrators during the conduct of LAC sessions?

## Framework of the Study

Continuing professional development is indeed required for all teachers even if there is no law requiring it. Teachers have an important part in building the nation. Quality teachers can positively give impact the holistic development of learners who have been shaped with values and armed with 21st-century learning skills that can lead the country with glory (DepED Order No. 36, s. 2013). This is parallel with DepEd Order No. 42, s. 2018 which is known as Philippine Professional Standards for Teachers (PPST). In response to the needs of K to 12 Basic Education Reform, teachers should follow a rigorous training to adapt to the ever-changing track of education system. One way to help teachers is to provide a cost-effective avenue called the Learning Action Cell (LAC) which used a collaborative approach to address shared problems of teachers within a school.

Support to teachers is very essential for them to do their assigned task and exhibit quality curriculum and instruction as teaching is considered exhausting and emotionally draining (Arkansas State University, 2017, June 8). In order to maintain a state of balance in their career and personal life, teachers should support each other and develop a sense of trust and empathy. If regular interactions among teachers are being practiced, it will lead to a professional mentor-mentee relationship. This activity will make teachers feel supported which can be emanated to the students. Likewise, most studies revealed that as teachers become more supportive to students, it leads to better social function and academic engagement to students as discussed by Farmer et. al, in Hoge Kamp (2016). Mizell (2010) mentioned in her book that teachers' professional development is greatly essential to strengthen practices and engaging the group of teachers to pay attention to the learning needs of students. In the LAC sessions, teachers are collaborating in order to solve common problems they experience in the whole system which are potentially geared towards the success of the students and of the school. If the collaboration is successful, the results will far outweigh the existing problems of the public school system. This was also emphasized by Mizell (2010), that is, if teachers and school leaders regularly develop knowledge and skills to have the best educational practices, students will reach the optimum level of development and success.

On the other hand, teachers should also be involved in the whole process of their professional development through LAC sessions. Rabinowitz (2019) stressed in his article the importance of participation of every member of the institution to the success of implemented policy beginning with the identification of the interests of the participants in order to put more ideas, gain equivocal perspectives from different sectors and elements in the organization, practice fairness, improved credibility of the institution, and increased the chance of higher quality and success of every effort done. Since the main objective of conducting LAC sessions is to address common concerns of teachers in the implementation of the K to 12 programs, it is essential that they are part of the planning process to have better solutions to the problems which they can easily identify as they are the frontiers of the whole education process. As mentioned by Leonard (12 March 2019), involving stakeholders in any decision or project development will share rich ideas that can make better solutions. Similarly, teachers are considered stakeholders who can make undeniable contributions to the success of the project and they will build better engagement with the institution.

These arguments have supported the importance of conducting LAC sessions in schools. If LAC sessions are implemented in such a manner that it addresses the need of each and every teacher in the school, it will perfectly hone not only the teachers and students per se but also the whole system of education.

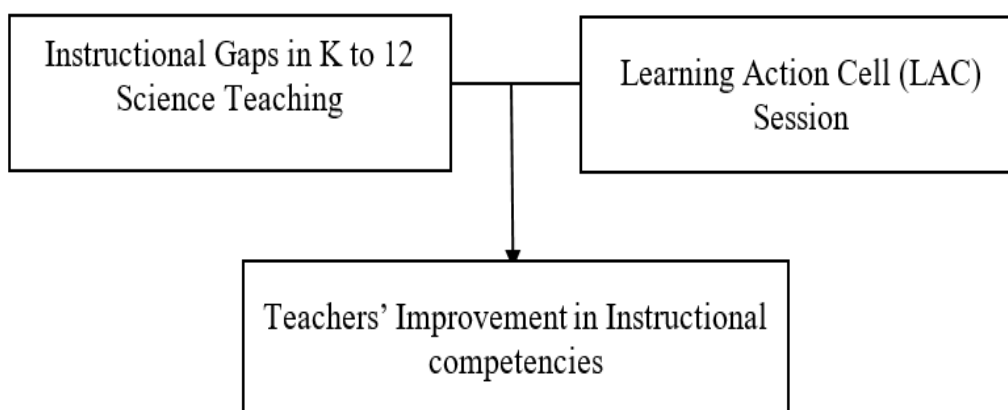


Figure 1. The conceptual framework of the variables

The conceptual model of this study shown in Figure 1 gives emphasis on the possible help and improvement in the delivery of instructions in teaching Science. It will also identify the possible gaps that hinder the delivery of quality teachings. It is also critical to know if there is really Teachers' Improvement in Instructional competencies in conducting the LAC session.

#### Significance of the study

The study will help the Department of Education in evaluating the extent of effectiveness of Learning Action Cell (LAC) in uplifting the quality of teachers, instructions and teaching pedagogy to address the needs of the K to 12 Basic Education curriculum. This study will further help in devising a framework that will enrich the teaching and learning process holistically. It will help us in giving a big picture of the current condition of our educational system. The measure of needs and the extent of problems in the department will be shown in some aspects of the study.

### Methodology

#### Research Design

Phenomenological qualitative research design was used to identify pertinent experiences of teachers and administrators in the entire process of LAC sessions. The semi-structured interview was done in order to get in-depth data about the participants' experiences. A phenomenological inquiry "is an attempt to deal with inner experiences unprobed in everyday life" (Merriam, 2002, p. 7). This kind of method can help in identifying meaning behind the human experience as it related to a phenomenon or notable collective occurrence (Creswell, 2009). The singularity of interest was established to know how students experience can give us an idea of how we can improve our assessment and instructions. The phenomenological foundation of this study "aims at attaining a profound understanding of the nature or meaning of our daily experiences (Crotty, 1998, p. 25).

#### Locale, Participants, and Sampling

The study was conducted in selected junior public high schools in the City of Sta. Rosa, Laguna. On the official website of the city concerning its profile about education (<https://santarosacity.gov.ph/about-sta-rosa/education/>), there are 8 official public junior high schools. Four schools participated in the study namely; Aplaya National High School, Aplaya National High School - Extension, Balibago National High School, and Sta. Rosa Science and Technology High

School. The participants of the study are science teachers of the said schools. Convenient sampling was then used to choose the participants due to the availability of science teachers during the conduct of the study.

#### Data Collection Tools

Interviewing is a particularly effective technique for collecting data about the lived experience of participants (Van den Berg, 2005). Interviews were conducted with a semi-structured approach which includes the main focus of the research presented in the previous literature. Data collection is directly tied to the analysis that eventually is coded or structured into themes. The in-depth interview with the participants already provided rich-data content in order to arrive at conclusions of the study.

#### Data Analysis

In order to easily analyze the results of the interview, the data were tabulated in matrix form in order to organize the different responses of the participants. After organizing the data, the researchers look for repetitive and similar responses that eventually suggest themes. This type of analysis uses thematic. Thematic analysis according to Maguire and Delahund (2017) is “the process of identifying patterns or themes within qualitative data” and uses qualitative methodologies that do not necessarily need a theoretical or epistemological perspective which makes it a very convenient method.

#### Ethical Considerations

Pertinent education authorities in the City of Sta. Rosa, Laguna were approached by the researchers to acquire authorization to conduct research. Prior to the interview, consent letter was obtained from the participants. The intention of the study was discussed specifically and every prospective participant was guaranteed that their responses were strictly tacted and of absolute secrecy. Accordingly, no identity of participants were used in revealing the results. All involvement was voluntary and it was discussed that anyone could pull out from the interview with no consequence. No one was forced or compensated for their involvement in this research.

### Results and Discussion

#### Involvement in the processes of LAC sessions

In every policy that is being implemented in any agency or institution, it is imperative that every member is part of the whole process from preparation to an evaluation in order to maintain its quality services and processes. Guided by pertinent literature, teachers were asked about their involvement in the preparation, implementation, and evaluation of LAC sessions in their respective schools. The researchers delved into the practices and activities done in order to check if teachers have been actively part of its decisions and implementations.

#### Needs Assessment Through Survey

The majority of participants said that the school head or the LAC leader conduct needs assessment through survey in order to identify existing problems that affect the curriculum, instruction, and learning outcomes of the students. One participant said, “Survey form was given to

them to check what are the needs of teachers, department, and so on. From the list of checked items, the headteachers will decide which will be the most appropriate for us and that's it. We follow them." The practice of giving needs assessment to the teachers defeat its purpose as headteachers or LAC leaders still have the power to decide which topic should be covered by LAC sessions. There exist problems with resources and availability of speakers. It was also mentioned that LAC leaders also encountered problems in presenting and approval of LAC sessions to the division office even if they already have the predetermined topics. Therefore, the results of the survey are still subject to approval in the division office.

"They have the survey but they are not using the results of the survey. I even asked my immediate head, why not use the results of (Individual Plan for Professional Development) IPPD, from there you can identify the strengths and weaknesses of teachers? Because in the IPPD, they can see there that teachers have problems with content and lack proper pedagogy. The reason given to me is that there is no available speaker for that concern especially they encountered problems for the approval of the speaker."

On the contrary, some participants said that they are not involved in the preparation phase of LAC. The teachers were not asked about their personal concerns and are just waiting for the next session of LAC and topics to be covered in the said activity. Meanwhile, some of the participants said that they are part of the implementation of LAC as they are sometimes assigned as LAC leader or the one providing information regarding the content that can be discussed in the next LAC session. One participant even served as speaker during the LAC session by sharing best practices.

The alarming part of the implementation of the LAC session is that there is no clear evaluation to check the strengths and weaknesses of the said activity. Therefore, there is no clear data that will directly inform about the success of LAC sessions indicating that the gaps are being addressed. The evaluation part of a certain process is vital in order to monitor and check the quality of its services. As reiterated by Miller (2017, May 26), evaluation is the best measure of success of any practice or process. To add up, school monitoring and evaluation ensure the progress of school through consolidated sources of information.

#### Utilizing Existing Documents

As it was already mentioned there are already existing documents that can be used in order to identify problems arising in the school. School heads or LAC leaders just need to extract and consolidate the data from the documents. According to participants documents such as Individual Plan for Professional Development (IPPD) and Results-Based Performance Management System (RPMS) can provide abundant data as regards the needs of the teachers.

"Yes. We see to it that the topics covered by LAC should be aligned with the results of RPMS otherwise, our proposal will be disapproved in the Division Office."

#### Problems Encountered in Teaching Science in the Implementation of K to 12 Curriculum

It is important to take note of the problems that science teachers encountered during the shift of curriculum to the K to 12 programs since this is also the concern why DepEd decided to have LAC sessions in schools. The participants provided in-depth data in order to identify conflicting concerns about the implementation of the K to 12 curricula as it directly affected the entire system including curriculum, instruction, professional development of teachers, and learning outcomes of the students. It is also very essential to emphasize that the K to 12 programs requires different sets of learning

competencies as there are already changes in the scope and sequence of different subjects, especially in the area of science. The following are the consolidated sub-themes resulted from the rich data provided by participants during the interview.

### Congested Science Curriculum

Resurreccion and Adanza (2015) mentioned that there is congestion in the Philippine Basic Education Curriculum that is why former President Benigno Aquino through the Republic Act of 2013 known as the K to 12 Program required the implementation of spiral progression approach to all public and private schools. However, the results of the interview revealed that the science teacher found out that K to 12 curricula is congested since there are overlapping concepts aside from the fact that there is no continuity of concepts being discussed. Science teachers have the difficulty to connect one concept to another, especially if it has to be continuity of topics in terms of inter-science discipline. It is also a challenge to recall the topics covered in the lower to the higher grade level that should be the arm of the students in order for them to develop understanding complex science concepts. The students lack retention in order to help them in grasping new knowledge that should be connected to their prior knowledge.

“Let say for example in the Grade 9 topic is volcanism. In Grade 10, the topic volcanism is already included in the discussion of plate tectonics. So, when I asked about the basic concepts of volcanism, some students can answer questions but still not concrete. The students just know the different types of volcanoes. When they are asked why volcanism included in the concept of plate tectonics is, they cannot expound. Maybe it was not explained in grade 9 science or maybe the students do not remember.”

Similarly, participants mentioned that topics are compacted that they do not know how to discuss every single detail in the curriculum's content. One participant emphasized that even if teachers use different strategies during the teaching-learning process, the coverage of the science curriculum is still cannot be tackled in the whole academic year.

One participant believed that there is already declogging in the K to 12 curricula as compared to the old curriculum. However, he mentioned that removing some topics in the content of science resulted in a shallow content of the K to 12 science curriculum.

“There were several topics being removed in the curriculum. However, being a biology teacher, I observed that there are topics such as organ systems that were removed which made the K to 12 approaches shallow. When it comes to topics, we are fortunate that our school obliged us to deepen the discussion that's why on our part, and even for other science teachers we seldom use the student's manual or the learner's manual”.

### Specialization Mismatch

When K to 12 programs was signed by former President Benigno Aquino, the community of science teachers was alarmed with the intertwined effect on the area of specialization of science teachers and learning skills that needed to be acquired by the students. As expected, science teachers gave emphasis on the tremendous effect of the spiral progression approach to their pedagogy, content, and knowledge.

Majority of participants said that they can teach of course the assigned subject to them, however, the problem arises when you need to dig deeper to the science concept that you need to elaborate as well as learning activities that you need to provide to the students in order for them to develop the minimum competencies required of them. Most of the participants are Biology majors so they always say that the problems come when they need to discuss other areas of discipline such as Physics and Chemistry which is, of course, the concern of science teachers who have specialization in the area of Chemistry and Physics. So the advantage of the spiral progression is for science teachers who have specialization in General Science.

#### Availability of Materials

The researchers observed how all participants emphasized the need to amplify the procurement or acquisition of materials for science activities especially laboratory experiments. This issue is no longer new in the public school system. There is always a mismatch between the number of students enrolled and the number of equipment and facilities in the school. Many teachers most especially science teachers have problems when it comes to learning activities that are supposed to be given to the students. Due to the unavailability of materials, teachers opt not to proceed to the activities anymore. This situation hinders the students to develop important skills necessary to build their knowledge of science concepts. Participants believed the importance of laboratory experiments it will bring to knowledge construction of students as one participant said, "We always try to come up with other activities because of the problems with laboratory materials that would broaden the skills of students, especially after our discussion, critical and creative thinking should be developed."

On the other hand, participants also mentioned that DepEd already adjusted the materials needed in the activities stipulated in the learner's manual for science. This may be assumed that DepEd is already aware of the current condition of the acquisition of materials and equipment in public schools. Nevertheless, teachers believed that the learning activities suggested in the said manual are "(mababaw) shallow" just for the sake of minimizing the burden of teachers with regards to the availability of materials in the school.

#### Lack of Students' Pre-requisite Skills

Reading comprehension and mathematical skills are the predominant aspects considered by participants very important in order for students to understand the concepts in science. There are still students who lack comprehension skills and worse they are not yet readers. In a report of Albano (2019, June 6) which stated that students in Grade 7 who have poor reading comprehension can be marked as a "perverse effects" to DepEd's results of performance evaluation and incentive given to elementary schools which urge "zero dropout target".

Likewise, science teachers mentioned that poor mathematical ability hinders the chance of students to understand complex science concepts and solve problems in the context of science. This issue in the K to 12 curriculum needs immediate attention since it cannot be addressed by LAC sessions alone. The spiral progressive approach is designed to critically mold the students from building basic science concepts and skills as it progress towards complex science concepts and skills. If in the case that the students lack the basic skills, there will be lagged in the progression of the required skills of these students. Therefore, teachers in these grade levels will experience difficulty in guiding the students to acquire the competencies they needed to be ready for the challenges of globalization.

## Implications of LAC Session

It was discussed how the K to 12 curricula directly affect the whole system including pedagogy, content, learning competencies, among others. This portion of discussion geared towards excavating how LAC sessions greatly contribute to science teachers. Based on the data gathered, the following themes were formed namely; content, strategy, and teaching-learning process.

### Content

Since it was discussed that science teachers have issues concerning science content due to the mismatch of specialization and the spiral progression approach, the participants were asked about the implications of LAC sessions in the improvement of their science content. In one of the responses, the participant said how LAC sessions do not adhere to the needs of each particular group of teachers because its focus is more in general or concerns the whole population of teachers.

“In the case of content, even if there are LAC sessions, it still the same because it is for all teachers in schools and not departmentalized. With this, the issue of content is not addressed due to the setup. The focus is very generic to all teachers, meaning, the topics covered in LAC sessions are applicable to all subject areas aside from the fact that LAC sessions have limited allotted time.”

In order to address this gap, science teachers practice peer mentoring. If the field of specialization of a teacher is Biology for instance, she will ask a Chemistry or Physics major teacher to help her to be ready with her lessons and eventually guide her in preparing learning activities that are best suited in the topics asked. This event is one good practice, however, this activity could have been much address better if given focus in LAC sessions.

### Strategy

Strategy used by teachers directly influence the academic performance of the students. When participants were asked about the implications of LAC sessions on their teaching strategies, almost all of them said that somehow LAC sessions helped them on what teaching strategy is best suited in a particular topic.

“Through the demonstration teaching of my fellow teachers, somehow I gained ideas on how I can execute certain topics in my subjects. Usually, they also give certain ideas that you can also adapt to your subject since the one giving demonstration is based on their discipline, let’s say an English teacher. Last time, the strategy used is for English, but he was able to give us an idea of how we can use that to our own field.”

In addition, teachers said that LAC sessions give opportunities by giving additional insights on how they can improve their teaching strategies and most especially in the area of classroom management skills.

### Teaching-Learning Process

It is one of the very important parts of being a teacher. To secure that the students are learning and give timely feedback. Though the teaching and learning process covers a lot of factors, let us focus specifically on the role of the teachers. “The teacher cannot tell students what concepts to construct

or how to construct them, but by judicious use of language they can be prevented from constructing in directions which the teacher considers futile but which, as he knows from experience, are likely to be tried (von Glasersfeld, 1995: 184)". Teachers give directions to learning though they never give specific things to learn at the end of the day. Every aspect of learning is not always an expected outcome but a series of surprises. In teachers' perspective on the Learning action cell, "the advantages of that is that it enhances our understanding of our knowledge and understanding of different ways of teaching science, maybe the disadvantage of our lac session is fast". It is also the same as other statements below: "it is effective, not always 100%, although of course, it has advantages and disadvantages, it is good, for teachers, training"

"The content is our number 1, eh mentoring, we talked to the science teacher master, will conduct additional session, suppose he is area of chemistry, there will be a session for chemistry"

With regard to the learning process of teachers, they have shown a great deal of interest and enthusiasm in learning new trends. It opens new opportunities for teachers for more collaboration with other faculty members. This scenario leads to more sharing of knowledge and establishes mentoring activities.

#### Gaps and Challenges of Learning Action Cell

Highly skilled teachers are one of the most important influences on student success (Kane, Rockoff & Straiger, 2007). The critical role of the teacher in facilitating the class and conducting different activities as part of the lesson development and delivery play a significant role in students' progress. This is directly relevant in the formation of the student's interest in the lessons and active participation in the class discussion. The constellation of skills that teachers should possess was also captured by a triadic framework for understanding teaching and learning (Darling-Hammond & Bransford 2005). The following themes below discuss, how the teachers develop prior competencies needed to execute the teaching and learning process effectively.

#### On the conduct of LAC Sessions

The number of training and enhancement activities contribute to the capabilities of teachers in developing materials for teaching. Kayani, Morris, Azhar, and Kayani (2011) say that Professional development through intensive, in-service training can greatly enhance the capacity of universities /college teachers in operationalizing the innovative concept of the teaching-learning process. Some of the respondents directly stated that "

the problem is because here is the LAC session we really say it's rare, he doesn't really implement that usually should atleast every quarter there should be twice". The objective of the Department of Education in providing a group of experts to help each other to improve instructions was not realized. Addressing this kind of scenario should be properly addressed by the top management to avoid 'push and pull' factors that hinder the implementation of the program. It is raised by the respondents that if possible, "Dapat every month". Another statement of the respondent says:

"We have, in fact, a lot of DepEd programs that work on us, which is why root causes are known, because for all kids, in that case, there is a lot I need to address first so he won't be available in a short span of time it takes a long period of time to address".

The eagerness to learn is a good sign that teachers are open to improvement. The prioritization of the LAC session helps to sustain the needs of the teachers for a successful implementation of the K to 12 Education program.

LAC sessions should be departmentalized

The type of teacher training matters in the development of their skills and desired outcomes. The primary objective of DepEd Order No. 35 s. 2016 is to provide continuing professional development strategies for the improvement of teaching and learning. Since every individual needs specific specialized training, it is encouraged to conduct the LAC session in accordance with their fields so that they can directly address the problems encountered in instructions. For a teacher to fulfill his or her professional function in a given domain, a synthesis of knowledge, attitudes and practical skills is needed (Falus, 2002)... A specifically designed program for teachers professional development should be considered, this is parallel to the statements of the respondents:

“seems to be lacking, if the focus is because he doesn't specifically design for each subject unless I do his survey specific for learning area, he just lacks alignment”

“because the lac session is not departmentalized, that is the first problem there, so it does not address the specific problem for example science, just science, you have to relate it to other subjects, to have a parallel session for everyone

According to Walter, Wilkinson, and Yarrow (1996) “the quality of teaching depends on the quality of the teachers which, in turn, depends to some extent on the quality of their professional development”

Development of Instructional Materials as a Result of LAC Sessions

One of the main objectives of the LAC session is to enhance the skills of the teachers in providing students well-designed instructional materials. In the set of key indicators stipulated in the DepEd order, it is specifically mentioned that the LAC session will help in pursuing “changes in teachers’ pedagogy or practices which are aimed at improving learners’ participation and achievement in school (DepEd Order No. 35 s. 2016).” Teaching in secondary schools can only be effective through the use of some instructional materials that guide the teacher in explaining topics to students effectively and efficiently (Ofune, 2001). The provision or presence of these facilities and materials is of great importance to enhance better and effective learning in schools (Ralph, 1999). This research study purposively discusses the fundamental issues of teachers in developing instructional materials for effective teaching in compliance with the needs of the K to 12 basic education curriculum. The following statements are the outcomes of fruitful discussion during LAC sessions.

“samin sa school, meron kaming program para sa Filipino reading comprehension, Project BATA, sa English Project READ, un nga para maaddress ung comprehension ng bata, kaso nga lang ang problema din is ung willingness ng bata na magstay sa program na matulungan ang sarili nila, kasi for one, kailangan, kukuhanin mo sila ng hindi regular time ang pasok ng bata ay 7:30-4:00 PM, every Friday sila ay magstay ng 1 hour, eh minsan ung ibang bata napasok ng walang pagkain, kailangan nila sympre umuwi agad, kasi nga gutom na ang bata, kaya minsan ang ginagawa, drastic method, ung bag kukuhanin para mapagstay si bata,

eh kaso wala din ung interest, naforce mo lang, kaya wala din ung learning nila.” “napag-uusapan din, kaya may mga isinilang na mga programs”.

There is also an instance that gives way to brainstorming:

“you can say that you need to then just enter, next time. You can justify that you need it. Just like in robotics because we have robotics competitions, it seems like after October we can still compete there, no contest, but atleast the teachers are acquainted”.

In a bigger view of the problem, in addressing the gap of students difficulty of learning. It shows that teachers are not the only factor that needs support and modification but also the way students see learning as part of their growth and development.

## Summary

To provide positive responses to the challenges of the implementation of K to 12 Basic Education, various programs and strategies mandated by the Department of Education were implemented in full scale. Learning Action Cell (LAC) provides us promising results if we were able to practice religiously. It is expected that all stakeholders will give support to this program and develop collaboration and cooperation.

As a result of the study, the following emerged as the main themes and sub-themes respectively. (1) Involvement in the processes of LAC sessions, 1.1 Needs Assessment through Survey; and 1.2 Utilizing Existing Documents. The following themes discuss all the processes followed by the teachers, coordinators, and principals in school. The effective implementation based on policies and guidelines will help in providing better results. Obedience in following proper guidelines during and after implementation lessens the risk and negative outcomes.

(2) Problems Encountered in Teaching Science in the Implementation of K to 12 Curriculum; 2.1 Congested Science Curriculum; 2.2 Specialization Mismatch; 2.3 Availability of Materials; and 2.4 Lack of Students' Pre-requisite Skills. A program implemented is not always a perfect program at the very start. Piloting always gives way to self-improvement and enhancement. This is the very essence of research, to study, and improve the practices.

(3) Implications of LAC Session; 3.1 Content; 3.2 Strategy; and 3.3 Teaching-Learning Process. It only appears that as we go along with the training during the LAC session, we continually discover things that we can still improve in order to give quality education to our students. The findings and implications justify that we need to pursue more ways or different techniques to address the existing problem. As we volunteer ourselves in upgrading our skills, it leads to more productive learning experiences.

(4) Gaps and Challenges of Learning Action Cell; 4.1 on the conduct of LAC Sessions; 4.2 LAC sessions should be departmentalized; the results lead us to innovate and develop policies that will strengthen the present. Gaps are results of vivid studies and careful examination of the system. it gives clarity to the purpose of our research. And lastly,

(5) Development of Instructional Materials as a Result of LAC Sessions. At the very end of our journey, we tried to apply things that we acquire in order to come up with different innovations that will help our students learn. Through our hardship in investigating ways in improving our ways and practices in delivering quality instructions, we were able to integrate big changes to our society. As we continue to fight for change, we will realize that every day should be a space for improvement and further development in pursuit of high quality of education for Filipino youth.

## Conclusion

Teachers' involvement in the process and decision making is very important. Focus on the actual needs of the teachers. More importantly, evaluation should be part of the process of LAC sessions in order to monitor and check its progress.

Problems encountered by science teachers such as availability of materials/equipment and poor pre-requisite skills such as comprehension and mathematical skills of students are not direct concerns of LAC sessions because it is more of a budgetary issue and the other is the more academic performance of the students. However, LAC sessions may invite experts in this field that can somehow help them fill the gaps.

LAC does not have direct implications on the content of science teachers due to the generality of its sessions and science teachers greatly depend on peer-mentoring. On the other hand, almost all of the participants agreed that LAC sessions help them improve their teaching strategies. LAC sessions should be by area of teaching load to ensure that shared concerns of each department are being addressed. The willingness of the teachers to be trained and improved. Unlearn, relearn, and learning new ways of teaching, assessment strategies and adopting 21st-century skills. The study also results in different indirect effects into the system such as the main roles of the school heads are to be clarified in the process of planning and implementation. Professionalism is also a big point to consider, willingness and dedication to work. These are all reflections of their teaching philosophy, a very good guide for teachers improvements.

## Recommendations

The research study made a big impact on different practices in and outside the school. This also challenges our leadership styles and school climate. The way we handle and resolve issues within the scope of our duties and responsibilities. Therefore the following are recommended in order to deliver more concrete evidence to address the existing problems in our educational system.

1. Best practices in the execution of Learning Action Cell in different schools should be recognized so that other schools may have a good example or model.
2. The leadership style of the school heads/principals may have a bearing on the effectiveness of the delivery of the program. They should give suggestions to the planning committee of the program, furthermore the spending of the budget from the school MOOE.
3. Evaluation of the conduct of activity should reflect on the present practice, this is very important because it will give us the range of improvement of teachers.
4. LAC sessions cannot fully answer the problems on the content pedagogy of the teachers, therefore the Department of Education should provide more means to help teachers improve their quality of teaching.

## References

- Albano, E. (2019, June 6). DepEd urged to stop sending non-readers to high school. PIDS in the News. Retrieved from <https://www.pids.gov.ph/pids-in-the-news/2886>
- Arkansas State University. (2017, June 8). The Importance of Teacher Collaboration. Retrieved August 6, 2019, from <https://degree.astate.edu/articles/k-12-education/importance-of-teacher-collaboration.aspx>
- Balderas, D., Tabuga, M., & Petilla, J. L. (2018). Roadmap for UN 2030 Education Agenda for Learners with Special Educational Needs of Department of Education, Pangasinan Division II, Philippines. *Journal of ICSAR*, 2(2), 120-128.
- City Government of Sta. Rosa Laguna. (n.d.). Education. Retrieved September 2, 2019, from <https://santarosacity.gov.ph/about-sta-rosa/education/>.
- Deped Order No. 35 s. 2016. <http://www.deped.gov.ph>. 2016
- Eraut, M. (2000). Non-formal learning and tacit knowledge in professional work. *British journal of educational psychology*, 70(1), 113-136.
- Fielding, M., Bragg, S., Craig, J., Cunningham, I., Eraut, M., Gillinson, S., Horne, M., Robinson, C.,
- Flores, M. S. (2017). LAC sessions: how do we prepare for it? ILO/UNESCO. (1966). Recommendations concerning the status of teachers.
- Hogekamp, Z., Blomster, J. K., Bursalioğlu, A., Călin, M. C., Çetinçelik, M., Hastrup, L., & Van den Berg, Y. H. (2016). Examining the Importance of the Teachers' Emotional Support for Students' Social Inclusion Using One-with-Many Design. *Frontiers in Psychology*, 7. doi:10.3389/fpsyg.2016.01014
- Kiguwa, P., & Silva, A. (2007). Teaching and Learning: Addressing the Gap through Learning Styles. *South African Journal of Psychology*, 37(2), 354–360. doi:10.1177/008124630703700211
- Knight, P. (2002). A systemic approach to professional development: learning as practice teaching and Teacher Education18229241
- Lieberman, A., Grolnick, M. (1996). Networks and reform in American education teaches College Record98745
- Little, J.W., Horn, I.S. & Bartlett, L. (2000). Teacher Learning, Professional Community, and Accountability in the Context of High School Reform. Report to the Office of Educational Research and Improvement, U.S. Department of Education and the Spencer Foundation. Berkeley: Graduate School of Education, University of California, Berkeley
- Little, J.W. (2003). Professional community and the problem of high school reform *International Journal of Educational Research*37693714
- Little, J. W. (2012). Professional community and professional development in the learning-centered school. In *Teacher learning that matters* (pp. 42-64). Routledge.
- Leonard, K. (2019, March 12). The roles of stakeholders in the planning process. Retrieved August 6,

2019, from <https://smallbusiness.chron.com/roles-stakeholders-planning-process-32051.htm>

Lumayag, G. P., Antopina, J. L., Galera, Z., Aleonar, G., & Gemota, M. A. School Website for Learning Action Cell in Dalaguete Districts.

Maguire, M., & Delahunt, B. (2017). Doing a thematic analysis: a practical, step-by-step guide for learning and teaching scholars. *All Ireland Journal of Teaching and Learning in Higher Education (AISHE-J)*. Retrieved from <http://ojs.aishe.org/index.php/aishe-j/article/view/335>

Miller, D. (2017, May 26). Importance of school monitoring and evaluation systems. Retrieved from <http://leansystemsociety.org/importance-of-school-monitoring-and-evaluation-systems/>

Mizell, H. (2010). Why Professional Development Matters. Retrieved from [https://learningforward.org/docs/default-source/pdf/why\\_pd\\_matters\\_web.pdf](https://learningforward.org/docs/default-source/pdf/why_pd_matters_web.pdf)

Morales, M. P. E. (2016). Participatory action research (PAR) cum action research (AR) in teacher professional development: A literature review. *International Journal of Research in Education and Science*, 2(1), 156-165.

Morales, M. P. E., Abulon, E. L. R., Soriano, P. R., David, A. P., Hermosisima, M. V. C., &

Gerundio, M. G. (2016). Examining teachers' conception of and needs on action research. *Issues in Educational Research*, 26(3), 464.

Nordstrum, L. (2016). To improve quality in education, reconsider true definition of 'good teacher', RTI International, Global Partnership for Education. Retrieved on September 02, 2019. Retrieved from <https://www.globalpartnership.org/blog/improve-quality-education-reconsider-true-definition-good-teacher>

Orleans, A. V. (2007). The condition of secondary school physics education in the Philippines: Recent developments and remaining challenges for substantive improvements. *The Australian Educational Researcher*, 34(1), 33–54. doi:10.1007/bf03216849

Rabinowitz, P. (2019). Chapter 7. Encouraging involvement in community Work | Section 8. Identifying and analyzing stakeholders and their interests | Main Section. Retrieved August 3, 2019, from <https://ctb.ku.edu/en/table-of-contents/participation/encouraging-involvement/identify-stakeholders/main>

Resurreccion, J. A., & Adanza, J. (2015). Spiral progression approach in teaching science in selected private and public schools in Cavite. *Proceedings of the DLSU Research Congress*, 3(2015), 1-12. Retrieved from [https://www.dlsu.edu.ph/wp-content/uploads/pdf/conferences/research-congress-proceedings/2015/LLI/017LLI\\_Resurrecion\\_GF.pdf](https://www.dlsu.edu.ph/wp-content/uploads/pdf/conferences/research-congress-proceedings/2015/LLI/017LLI_Resurrecion_GF.pdf)

Stoll, L. (2004). Networked Learning Communities and Professional Learning Communities. Paper presented at the Networked Learning Communities Seminar, San Diego, CA, April 2004

Stronge, James. (2007). *Qualities of effective teachers* (2nd Ed.). Alexandria, VA: Association for Supervision and Curriculum Development.

Thorp, J. (2005). *Factors Influencing the Transfer of Good Practice* (DfES Research Report 615)  
University of Sussex and Demos Brighton, UK

UNESCO ISO. (2006). *Teachers and educational quality*. UNESCO. 2014. EFA Global Monitoring  
Report *Teaching and Learning: Achieving quality for all*.

Whitehouse, Claire. (2011). *Effective continuing professional development for teachers*.

Manchester, UK: Center for Education Research and Quality.