ACTION RESEARCH PROPOSAL

LEAD PROPONENT	DE ROJA, ELEANOR V.
MEMBER	SEE, JERWINA V.
MEMBER	N/A
TITLE OF RESEARCH	Portfolio Based LAC in the Functional and Core Behavioural Competencies of Proficient Science Teachers
TYPE OF RESEARCH	ACTION RESEARCH
DIVISION	**PASIG CITY**

CONTEXT AND RATIONALE

Learning Action Cell (LAC) is an activity being conducted by teachers for professional development. It involves a group of teachers with common goals and that is to improve the teaching learning process so that the student's academic performance will improve, thus achieving quality education. This is reiterated in DepEd Order No 35 s. 2016 which states that DepED fully supports the continuing professional development of its teaching personnel based on the principle of lifelong learning and commitment to the development of teachers' potential aimed towards the success in the profession through the learning action cell. It is believed that a community of practice enables teachers to do collaborative planning, problem solving and action implementation that will lead to improved teachers' knowledge, skills and attitudes that will significantly improve student learning development. The school head, head teachers and supervisors play an important role in the professional development of teachers.

One of the studies which was explored by a researcher was the roles and perspective of secondary school principals in the development of the professional learning community in the Philippines. The two views which were raised were how the principals view and implement national policies and teacher professional development at the school level and how they perceive and establish the professional learning community in schools. The lack of continuing teacher development programs suggests that principals in the study failed to establish the professional learning community in their schools. This offers some insights on the leadership experiences of principals in the implementation of national policies on

A legacy as rich as excellence!

Misamis St., Bago Bantay, Quezon City
Tel. Nos.: 920-5824; 926-2213 loc. 801
Email Address: ncr@deped.gov.ph
Website: http://www.deped.gov.ph/regions/ncr/

ISO 9001:2015
Certificate No. PHL190008

professional development and how it affects their roles in supporting teachers' continuing professional development. (Capili-Balbalin.W (2017)

Additionally, in a study conducted in Denver Public Schools; it was found out that lesson study has the power to transform the life of a school. It deepens the interaction of the school's professional learning community by developing the habit of self-reflection and critical thinking through collaboration with colleagues and structured observation with the students.

Furthermore, the results of the research conducted in Japan revealed that lesson study contributes to mobilizing preservice teachers, improving their performance, and developing positive attitudes and beliefs of learners and trainers regarding its use in higher education. (Kanellopoulou,E and Darra,M, 2019)

Based on the study conducted by Gilmore,J,Hawkins,A. 2003, teachers can deepen their own content knowledge, adopt effective teaching strategies, and become more reflective about their instruction. Teachers were more comfortable about their instruction. Thus, becoming a professional learning community.

In an article "Teachers Perspective about Lesson Study in Secondary School Department: A collaborative vehicle for Professional learning and Practice, it was found out that teachers identified challenges that inhibited the learning of their students and prepared innovative approaches to address the learning challenges. Teachers also reduce the feeling of professional isolation. (Cajkler, W,Norton,J,Peddler,D,Xu,H, 2015)

In a similar study conducted in Cambridge, it also showed that the lesson study is an effective way to help them grow individual teaching skills, knowledge, and confidence in teaching; thus, greater opportunities for students to engage in learning (CajklerW, 2015).

In action research conducted in the Division of Marinduque on the effectiveness of Cluster Learning Action Cell in Science in Improving Teaching-Learning Process, the teaching ability of teachers has improved after the conduct of cluster learning action cell in terms of content and strategy; thus, there is a significant difference on the teaching ability of teachers before and after the conduct of learning action cell. Results in the achievement level of students also increased. (Suarez,M. 2017)

Moreover, this study showed that there was a significant difference in the assessment roles of teachers and implementers in the roles on the conduct and implementation. The results proved the effectiveness in conducting learning action cells in the different schools in the province of Cavite, in developing competent teachers; the results suggested the continuous conduct of LAC. (Binauhan, R.)

The challenge for schools is to consider and institutionalize and to consider the practice of the professional learning community through the learning action cell as they may

improve their professional competence, which will transform this educational institution to initiate and innovate more collaborative and reflective practices.

The Department of Education aims to complete the full cycle of embedding the 37 PPST indicators into teacher's performance. The DepEd Order No 2, s 2022 entitled, "Implementation of the Results Based Performance Management System-Philippine Professional Standards for Teachers (RPMS-PPST) for School Year 2021-2022" provides the guidelines on the performance management and appraisal of teachers using the remaining 18 indicators in their RPMS.

The passage of the K to 12 Law (R.A. 10533) in May 2013 as a response to the changes and challenges of the modern world have changed the landscape of teacher quality requirements in the Philippines. The current reform calls for teachers to critically reflect on their roles and the expectations of them in the context of K to 12 Education.

Thus, the use of the electronic Self-assessment tool (e-SAT) is used to identify the level of capability and priority that needs to be addressed in the functional and behavioral competencies. This table shows the results of the e-SAT of proficient science conducted this February 2022.

A. Functional Competencies

	Level of	Capability			Priority	Areas to be	Addressed
1. Content Knowledge and Pedagogy (PPST Domain 1)	Low	Moderate	High	Very High	Low	Moderate	High	Very High
1.1 Applied knowledge of content within and across curriculum teaching areas. (PPST Indicator 1.1.2)	0	2	17	2	6	8	6	1
1.2 Used research-based knowledge and principles of teaching and learning to enhance professional practice. (PPST Indicator 1.2.2)	7	6	8	0	4	11	4	2
1.3 Displayed proficient use of Mother Tongue, Filipino and English to facilitate teaching and learning. (PPST Indicator 1.6.2)	0	1	15	5	7	8	4	2

Republic of the Philippines
Department of Education
NATIONAL CAPITAL REGION

1.4 Used effective verbal and non-verbal classroom communication strategies to support learner understanding, participation, engagement, and achievement. (PPST Indicator 1.7.2)	0	3	10	8	7	8	5	1
2. Learning Environment (PPST Domain 2)								
2.1 Established safe and secure learning environments to enhance learning through the consistent implementation of policies, guidelines and procedures. (PPST Indicator 2.1.2)	0	3	10	8	8	7	3	2
2.2 Maintained learning environments that promote fairness, respect and care to encourage learning. (PPST Indicator 2.2.2)	0	1	6	14	8	4	8	1
2. Learning Environment (PPST Domain 2) - continuation								
2.3 Maintained supportive learning environments that nurture and inspire learners to participate, cooperate and collaborate in continued learning. (PPST Indicator 2.4.2)	0	3	7	11	7	5	8	1
2.4 Applied a range of successful strategies that maintain learning environments that motivate learners to work productively by assuming responsibility for their own learning. (PPST Indicator 2.5.2)	0	4	15	2	3	12	5	1

3. **Diversity of Learners, Curriculum and Planning, & Assessment and Reporting (PPST Domains 3, 4, and 5)**								
3.1 Designed, adapted and implemented teaching strategies that are responsive to learners with disabilities, giftedness and talents. (PPST Indicator 3.3.2)	4	8	6	3	3	10	5	3
3.2. Adapted and used culturally appropriate teaching strategies to address the needs of learners from indigenous groups. (PPST Indicator 3.5.2)	5	7	7	2	2	9	6	3
3.3 Adapted and implemented learning programs that ensure relevance and responsiveness to the needs of all learners. (PPST Indicator 4.3.2)	1	5	13	2	2	9	6	3
3.4 Utilized assessment data to inform the modification of teaching and learning practices and programs. (PPST Indicator 5.5.2)	0	6	12	3	6	9	5	1
4. **Community Linkages and Professional Engagement & Personal Growth and Professional Development (PPST Domains 6 & 7)**								
4.1 Maintained learning environments that are responsive to community contexts. (PPST Indicator 6.1.2)	0	8	11	2	6	10	4	1

4.2 Reviewed regularly personal teaching practice using existing laws and regulations that apply to the teaching profession and the responsibilities specified in the Code of Ethics for Professional Teachers. (PPST Indicator 6.3.2)	0	10	9	2	7	8	5	1
4.3 Complied with and implemented school policies and procedures consistently to foster harmonious relationships with learners, parents, and other stakeholders. (PPST Indicator 6.4.2)	1	3	14	3	6	7	7	1
4.4 Apply a personal philosophy of teaching that is learner-centered. (PPST Indicator 7.1.2)	0	7	9	5	5	14	1	2
4.5 Adopt practices that uphold the dignity of teaching as a profession by exhibiting qualities such as caring attitude, respect and integrity. (PPST Indicator 7.2.2)	0	4	13	4	7	7	6	1
4.6 Set professional development goals based on the Philippine Professional Standards for Teachers. (PPST Indicator 7.5.2)	0	6	11	4	6	11	2	2
5. Plus Factor								
Performed various related works/activities that contribute to the teaching-learning process.	0	4	15	2	5	9	6	1

B.Core Behavioral Competencies

A legacy as rich as excellence!
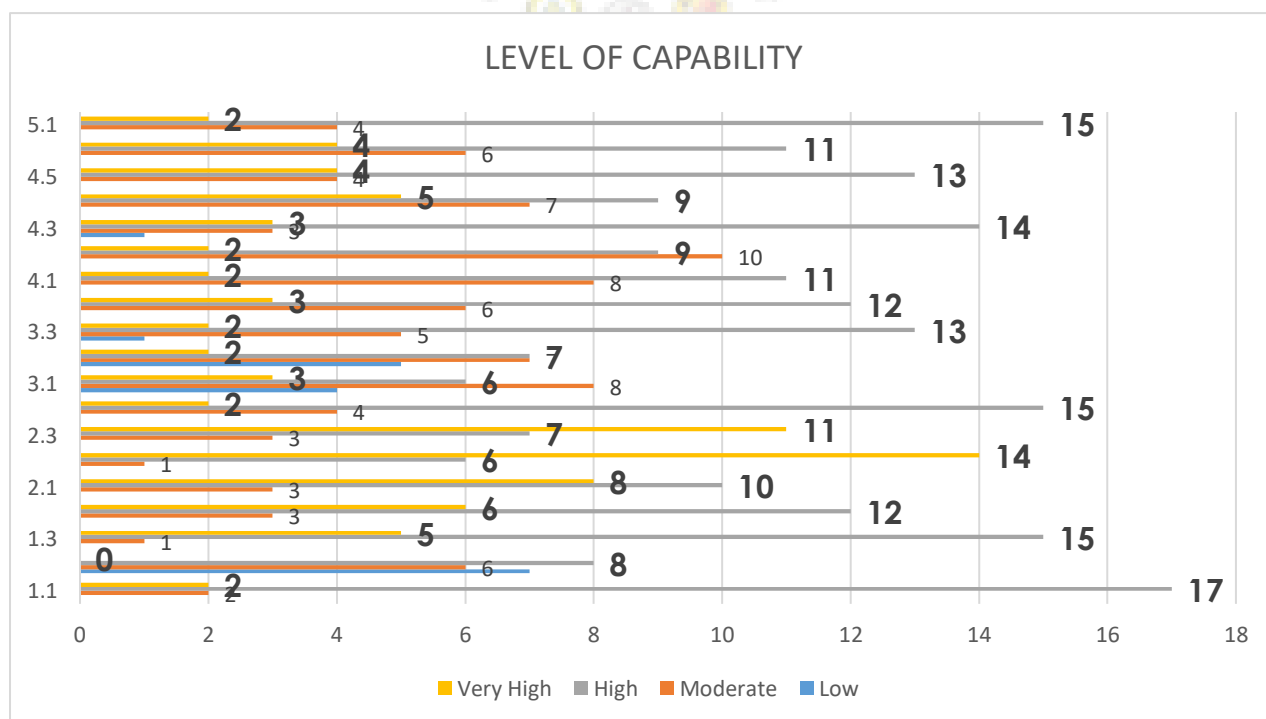
Misamis St., Bago Bantay, Quezon City
Tel. Nos.: 920-5824; 926-2213 loc. 801
Email Address: ncr@deped.gov.ph
Website: http://www.deped.gov.ph/regions/ncr/

ISO 9001:2015
Certificate No. PHL190008

	Self-management	Professionalism and Ethics	. Results Focus	Teamwork	Service Orientation	. Innovation
(Role model)	6	1	2	7	1	3
(Consistently demonstrates)	9	20	7	9	3	0
(Most of the time demonstrates)	6	0	12	5	8	4
(Sometimes demonstrates)	0	0	0	0	7	9
(Rarely demonstrates)	0	0	0	0	2	5
	21	**21**	**21**	**21**	**21**	**21**

The graph shows the level of capability of proficient science teachers in terms of functional competencies. Results showed that the level of capability is generally high in terms of functional competencies.
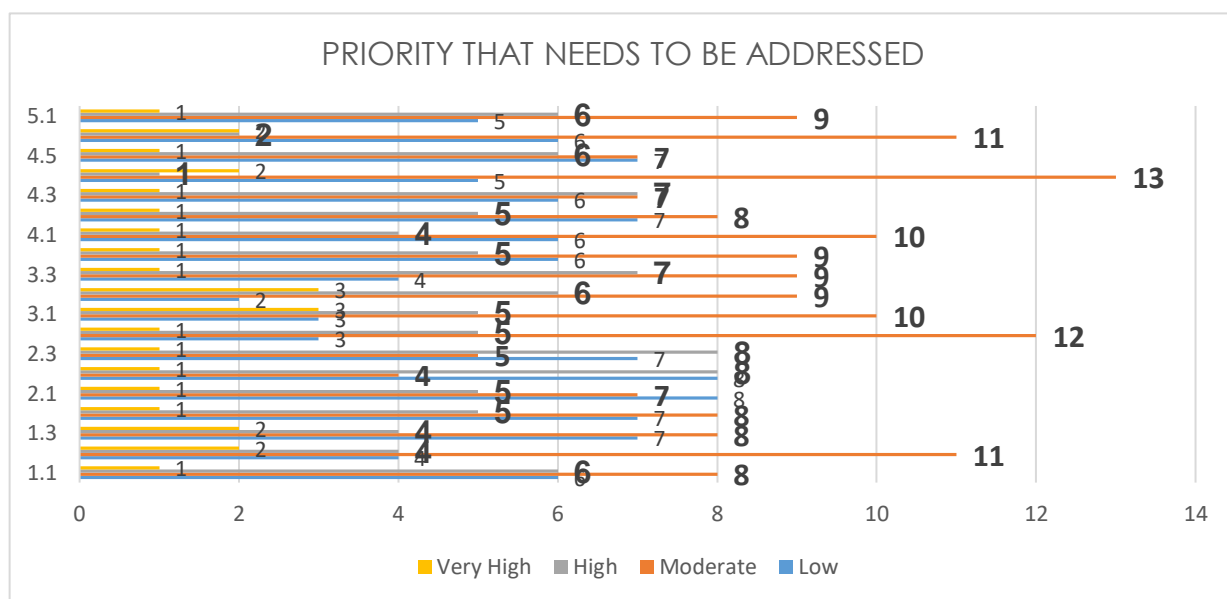
PRIORITY THAT NEEDS TO BE ADDRESSED

Legend: Very High, High, Moderate, Low

This graph shows the priority that needs to be addressed of proficient science teachers in terms of functional competencies in the results-based performance management system. Based on this, there are still competencies which need to be addressed and prioritized.

CORE BEHAVIORAL COMPETENCIES

Legend: (Role model, Consistently demonstrates, Most of the time demonstrates), Sometimes demonstrates, (Rarely demonstrates

This graph shows the behavioral competencies of proficient science teachers. The graph shows that there is a need to focus on service orientation and innovation.

The results of the E-SAT shows that there is a need to improve the functional as well as the behavioral competencies of proficient science teachers and that is by

A legacy as rich as excellence!

Misamis St., Bago Bantay, Quezon City
Tel. Nos.: 920-5824; 926-2213 loc. 801
Email Address: ncr@deped.gov.ph
Website: http://www.deped.gov.ph/regions/ncr/
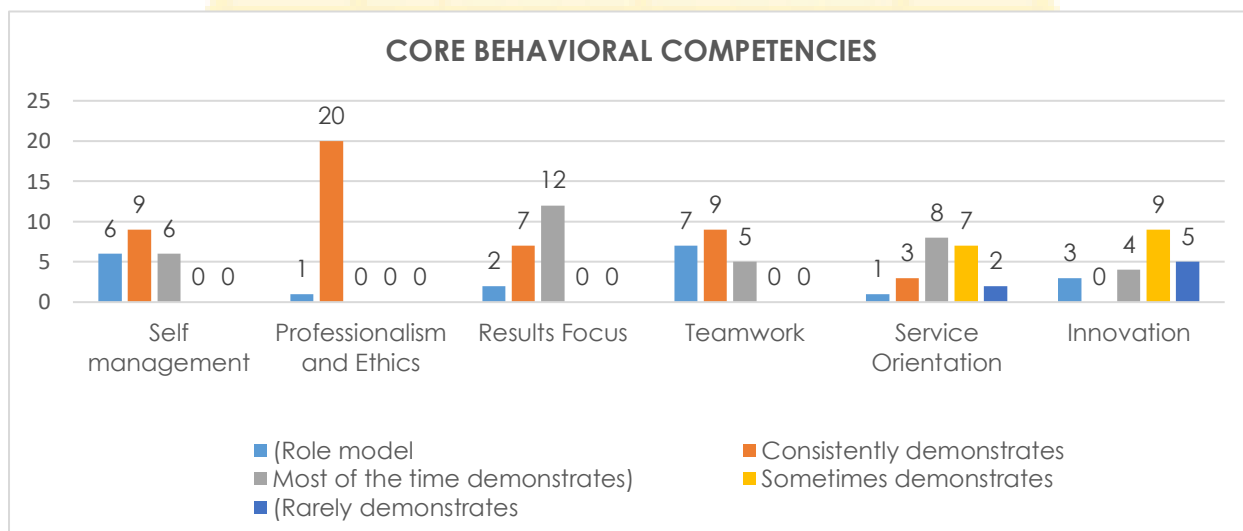
ISO 9001:2015
Certificate No. PHL190008

aligning the learning action cell in the Philippine professional standards for teachers through the portfolio-based learning action cell.

ACTION RESEARCH QUESTIONS

This study aims to determine the effectiveness of the enhanced learning action cell on the functional and behavioral competencies of proficient science teachers. Specifically, it sought to answer the following:

1. What is the effect of the portfolio-based learning action cell in the functional and behavioral competencies of proficient science teachers?
2. What is the mean in the IPCRF rating of proficient science teachers after conducting the portfolio-based learning action cell?
3. Is there any significant difference in the results of the e-SAT assessment in functional and behavioral competencies before and after conducting the portfolio-based learning action cell?
4. Is the portfolio-based learning action cell an effective tool in improving the functional and behavioral competencies of science teachers?

PROPOSED INNOVATION, INTERVENTION AND STRATEGY

The DepEd Order No 2, s 2022 entitled, "Implementation of the Results Based Performance Management System-Philippine Professional Standards for Teachers (RPMS-PPST) for School Year 2021-2022" provides the guidelines on the performance management and appraisal of teachers using the remaining 18 indicators in their RPMS. There are 9 observable and 10 non observable indicators in the Individual Performance Review and Commitment Form (IPCRF) for proficient teachers. The The current reform calls for teachers to critically reflect on their roles and the expectations of them in the context of K to 12 Education. The Results-based Performance Management System (RPMS) consists of indicators which will lead to quality of teaching. The change in the modalities in instruction and management has posed a challenge to instructional leaders as well and the only way to cope with the demands of these changes is through the enhanced learning action cell.

The learning action cell is a strategy where teachers collaborate and discuss common and best practices. The teachers focused more on content, pedagogy, classroom discipline and assessment. They are asked to discuss based on the needs of the teachers and learners and reflect their own practices.

In this proposed innovation, a portfolio will be prepared by the teachers and the LAC session programs, projects and activities will be based on the objectives and indicators set in the results -based performance management system. Thus, the teachers can easily monitor their own performance.

The programs, projects, and activities in the LAC focus on the 19 functional competencies and 6 core behavioral competencies. This action research theorizes that learning is knowledge sharing and active interaction in a small group setting. If the teacher engages in a professional learning community, they share their knowledge and interacts/ reacts with other members of the group for more effective teaching and learning results. The theory is supported by Alder's humanistic theory of personality that man is endowed with altruism, cooperation, creativity, uniqueness, and awareness. Dewey's pragmatic philosophy on education as the "continuous reconstruction of experiences and learning by doing in a socialized setting also supports this study.

The general indicators will be the functional and behavioral competencies and the IPCRF results. The independent variable will be an individual portfolio-based learning action cell.

INPUT	PROCESS	OUTPUT
Portfolio-based learning action cell	Conduct of LAC session based on the Philippine Professional Standards for Teachers PPST/ Results -based Performance Management System (RPMS)	Portfolio /Individual performance Review and Commitment Form

This figure shows a self-made research paradigm which supports the problem. The portfolio based-learning action cell will be made based on the programs, projects, and activities of the learning action cell session. There will be 19 topics on functional competencies and 6 in behavioral competencies. After the conduct of the LAC, the portfolio will be collected, and the e-SAT will be administered to determine if there is a significant difference before and after conducting the portfolio-based learning action cell.

The challenge for schools is to consider and institutionalize and to consider the practice of the professional learning community through the learning action cell as they may improve their professional competence, which will transform this educational institution to initiate and innovate more collaborative and reflective practices.

A legacy as rich as excellence!

Misamis St., Bago Bantay, Quezon City
Tel. Nos.: 920-5824; 926-2213 loc. 801
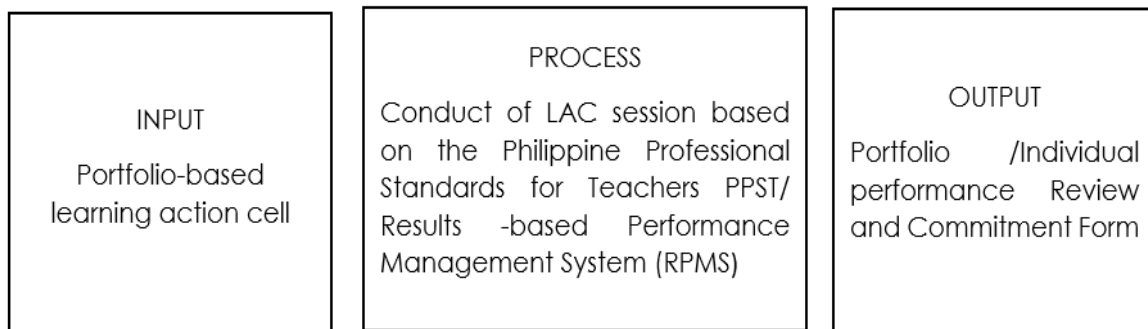Email Address: ncr@deped.gov.ph
Website: http://www.deped.gov.ph/regions/ncr/

ISO 9001:2015
Certificate No. PHL190008

ACTION RESEARCH METHODS

A. Participants and/or other Sources of Data and Information

The purposive sampling will be used in this action research and will be participated by 19 proficient science teachers. The age and the length of service will be included.The results of the e-SAT will be the basis of this action research. After the conduct of the portfolio-based LAC; the e-SAT will be administered to be able to determine if there is a significant difference in the results before and after conducting the innovation. The portfolio will be collected and the results of the IPCRF rating will be collected to determine the effect of the strategy in the individual rating of teachers.

B.Methods

I.Preparation of LAC Plan based on the PPST

The LAC plan will be prepared based on the 19 indicators in the Philippine professional Standards for Teachers (PPST) The mean of the e-SAT results and IPCRF will be determined.

II.Conduct of LAC Session

The LAC session will be conducted, and the portfolio will be done. The e-SAT tool will be administered, and the mean of the Individual performance Review and Commitment Form will be determined

C. Data Analysis Plan

RESEARCH ETHICS

As the study requires the participation of respondents, certain ethical issues will be addressed. Ethics is critically considered as an important element in the study as it involves people in the data collection. This is very important because in case that problems will arise, the respondents will be informed that their participation in answering the instrument will be through voluntary basis and that they will be assured that all the information gathered will be treated with strict confidentiality in accordance with R.A 10173 on data Privacy Act of 2012 and only be used for research purposes only.

DATA ANALYSIS PROCESS (STATISTICAL TREATMENT

1.Mean

The mean results of the classroom observation tool before and after using the prepared strategy will be computed to determine if it will improve the results of the classroom observation tool and IPCRf of selected proficient science teachers.

2. T-test

To determine if there is a significant difference between the mean percentage before and after using portfolio-based learning action cell, the t-test will be used. In calculating the t test, the following step was followed by the researcher.

Calculate the sum of the squares of the difference in the mean percentage scores.

$$\Sigma d^2 = \Sigma D^2 - \frac{(\Sigma D)^2}{N}$$

Calculate the standard error of the difference

$$S_{\bar{D}} = \sqrt{\frac{\Sigma d2}{N(N-1)}}$$

A legacy as rich as excellence!

Misamis St., Bago Bantay, Quezon City
Tel. Nos.: 920-5824; 926-2213 loc. 801
Email Address: ncr@deped.gov.ph
Website: http://www.deped.gov.ph/regions/ncr/

ISO 9001:2015
Certificate No. PHL190008

The tabular value of t, degree of freedom = 5; percent of error = 5% is 2.571.

ACTION RESEARCH WORK PLAN AND TIMELINES

ACTIVITIES	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
1.Conduct of e-SAT	▓					
2.Conduct of LAC		▓	▓	▓		
3.Submission of portfolio					▓	
4.Conduct of e-SAT after the LAC session					▓	
5.Gathering of Data					▓	
6.Finalization of Report						▓
7.Submission						▓

COST ESTIMATES

ACTIVITY	ELIGIBLE EXPENDITURES	QUANTITY	COST
1. Conduct of pre-e-SAT assessment	Bond paper /Ink	1 ream/ 1 set ink	PHP 1,300.00
2. Conduct of LAC	Communication Expenses.	Prepaid load (P300 each)	PHP 6,600 .00
3. Focus Group Discussion	Food	22 participants	PHP 3,000 .00
4. Conduct of post e-SAT assessment	Bond paper/Ink	1 ream	PHP 200.00
5. Gathering of portfolio	Bond paper, ink, binding	5 reams/1 set ink	PHP 1, 300.00
6.Finalization of Report/Submission	Bond paper, ink, binding	1 ream	PHP 200.00

A legacy as rich as excellence!

Misamis St., Bago Bantay, Quezon City
Tel. Nos.: 920-5824; 926-2213 loc. 801
Email Address: ncr@deped.gov.ph
Website: http://www.deped.gov.ph/regions/ncr/

ISO 9001:2015
Certificate No. PHL190008

7.Awarding/appreciation program	Food	22 participants	PHP 3,000.00
		TOTAL	**PHP15,600.00**

PLANS FOR DISSEMINATION AND UTILIZATION

DISSEMINATION ACTIVITIES	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
1.Conduct meeting for the participants/Distribute consent form	■					
2.Administration of e-SAT assessment	■					
3.Meeting for the dissemination of programs, projects, and activities for LAC		■				
4.Conduct of LAC session		■	■	■		
6.Focus Group Discussion					■	
7. Meeting /Finalization of Outputs/reports						■

REFERENCES

1. Cajkler,W. et al. Cambridge Journal of Education. April 2015.
2. Cambridge Journal of Education vol 46, s. 2016 "Adapting Lesson Study to Investigate Classroom Pedagogy in initial Teacher Education."
3. Duran,L and Duran E. The 5E Instructional Model: A learning Approach for Inquiry-Based Science Teaching".2014. The Science Education review, 3 (2),2004.
4. Gilmore Hawkins A." An Article on the Lesson Study Approach: Collaboration and Creativity are Key to Teaching Math Concepts". 2003.
5. Journal Research paper in education. Vol 30, s, 2015 "Teachers Perspective about Lesson Study in Secondary School Department
5. K.L McNeill and A.M Knight "Teachers pedagogical content knowledge of scientific argumentation: the impact of professional development of k-12 teachers." Science Education, vol 97, no6, pp 936-972,2013
6. Science 9 Learner's Module. Department of Education, 2013
7. DepEd Order No 42. S, 2016

A legacy as rich as excellence!

Misamis St., Bago Bantay, Quezon City
Tel. Nos.: 920-5824; 926-2213 loc. 801
Email Address: ncr@deped.gov.ph
Website: http://www.deped.gov.ph/regions/ncr/

ISO 9001:2015
Certificate No. PHL190008

8. DepEd Order No 16, s 2017.
9. DepEd Order No 35, series 2016.
10. https://doi.org/10.5539/hes.v9n3
11. What is Lesson Study? - Teacher Development Trust (tdtrust.org)
12. https://www.geocapabilities.org/geocapabilities-3-case-study-planning/
13. Binauhan, R. "Learning Action cell Implementation in the Public Elementary Schools in the Division of Cavite" pdf (ijarp.org). Retrieved June 28, 2021.
14. Capili-Balbalin, W (2017)." The Development of professional learning   communities (PLCs) in the Philippines: Roles and Views of Secondary School Principals". (Waikato.ac.nz). Retrieved, June 28, 2021.
15. Benneth, C. What is the 5E Instructional Model? April 16, 2019."What Is the 5 E Instructional Model" (thoughtco.com) Retrieved, June 28, 2021.

SUBMITTED BY: *(Signature over printed name)*	ELEANOR V. DE ROJA
	JERWINA V. SEE
	N/A

A legacy as rich as excellence!

Misamis St., Bago Bantay, Quezon City
Tel. Nos.: 920-5824; 926-2213 loc. 801
Email Address: ncr@deped.gov.ph
Website: http://www.deped.gov.ph/regions/ncr/

ISO 9001:2015
Certificate No. PHL190008