European Online Journal of Natural and Social Sciences 2022;
Vol.11, No 4 (s) Special Issue on Hybridity in the New Reality
ISSN 1805-3602

Localizing the Process of Writing Action Research for Basic Education: Designing the Multi-Analysis Layered Nexus (MALN) Approach

Rejulios M. Villenes, [1*], Ma. Lyn Igliane-Villenes[2], Raymar C. Francia[3], Raymund C. Francia[4],Mac Christian C. Dellosa[5], Meniano D. Ebora[6]

[1]Department of Education – Division of Quezon – Lopez East District; Technological University of the Philippines – Lopez; Laguna State Polytechnic University – Lopez Satellite Campus; Philippine Normal University South Luzon, Philippines; [2]Department of Education – Division of Quezon – Lopez West Elementary School Bldg. 1; Philippine Normal University South Luzon, Philippines; [3]Department of Education – Division of Quezon – Cogorin Ibaba National High School, Philippines; [4]Department of Education – Division of Quezon – Amontay National High School, Philippines; [5]Technological University of the Philippines – Lopez, Philippines; [6]Department of Education – Division of Batangas City, Philippines

*rejulios.villenes@deped.gov.ph

Abstract

This study designed a localized approach to working and writing action research suited for basic education. The researchers used multiphase mixed method research with three analysis stages focused on the identified problem. These stages include identifying the preferred approach in writing action research for basic education, designing a localized approach, and evaluating the developed action research approach. Five key informants participated in the preference assessment, while thirty respondents assessed the acceptability and significance levels of the designed localized approach. The key data analysis treatments employed qualitative data analysis, mean, and independent t-test. Preferred contextualized design for action research includes multiphase mixed-method research approaches. Grounded on the analyzed preference, the researchers designed the "Multi-Analysis Layer Nexus (MALN)" approach for basic education action research, featured with its focus approach matrix and a question-procedure-analysis (QPA) design alignment. The designed localized process received highly acceptable and highly significant ratings. No significant difference is derived from the two assessments. Recommendations included the conduct of MALN approach capacity building, skills and abilities profile, and data analysis treatments in the QPA matrix. The study is limited to the SALIKSIK (Strategic Action for Learning, Innovation, Knowledge Systems, and Instructional Keystones) Research Program of Lopez East and Lopez West Districts. Though, the DepEd Division of Quezon can use this for its localized action research approach. The developed MALN approach is an innovative, novel action research process specifically designed for basic education settings.

Keywords: Action research, basic education research, localized approach, multi-analysis

Introduction

Challenged by the effects of the past two years pandemic crisis, the current education landscape lies in a difficult position to deliver its mandate for quality basic education. All government agencies and social institutions aim to address the learning gaps affecting the learning development of their students. On a national scale, strategic macro-level approaches are introduced to guide its schools and learning centers in delivering programs to address these crises and gaps. At the field

level, schools strategized various mechanisms and initiatives to fulfill their mandates. Among these strategic initiatives, action research is always eyed and employed by teacher-researchers and school leaders who wish to bring significant change to their respective learning institutions.

Action research is a specific research method utilized explicitly by education professionals (e.g., school leaders and teachers) to improve pedagogy and practice at the school or classroom level (Spencer Clark et al., 2020). Often, it is a situation and context-based approach, making it more critical and responsive to the problems addressed through knowledge creation and application (Koshy, 2010). Further, it refers to the systematic process of evaluating, investigating, and analyzing problems – whether organizational, academic, or instructional – and aid school leaders and teachers in developing responsive and efficient solutions (Great Schools Partnership, 2015).

With this strategic research approach, teacher-researchers at the basic education level can bring significant change in their pedagogical practices and even in school management. Teachers become reflective, able to build professional cultures and create progress on school priorities (Briggs, 2015). Moreover, action research as a teacher inquiry becomes a viable strategy in resolving problems of pedagogic and professional practice in education settings (Mertler, 2021). The power of action research to meet teachers' necessities or "need for fit" is its most substantial and concrete attribute (Sagor, 2000). Thus, social movements in specific contexts are a product of action research implementation (Langdon et al., 2021). Further, it bridges integration of curriculum, instruction, and assessment in classrooms benefiting teachers, students, and stakeholders (Monem & Cramer, 2022). In the context of Philippine classrooms, action research positively impacts pedagogical practice, curriculum development, and professional development (Abrenica & Cascolan, 2022).

Historically, action research came into existence with Kurt Lewin coining this famous title (Adelman, 1993). Accordingly, Lewin wants to exemplify the identified problems followed by group decisions on what actions to take to explore and solve the analyzed issues. However, since its conceptualization, different challenges always affect its course of action. In particular, effective collaborative participation is hindered by time challenges (Husted & Tofteng, 2021). Aside from this concern, tensions in the facilitation of action research project implementation also hampered its target course (Lac et al., 2022).

In the basic education setting, action research also faces the same dilemma. Teachers often share their struggles in completing action research. In one study, difficulties among teachers can be traced from searching the literature, presenting the study, publishing results, and collecting data (Tindowen et al., 2019). Another set of problems among secondary school teachers includes a lack of action research knowledge, necessary skills, and support resources (Nagibova, 2019). Similarly, the inclusion of action research knowledge and processes in the curriculum is highly recommended to address the limitations and challenges experienced by the teachers in making one (Abelardo et al., 2019).

These synthesized problems also conform to the findings of several studies focused on the challenges experienced in doing action research (Ulla, 2018; Zhou, 2012). Common reasons for these challenges include insufficient knowledge of methodology or specific processes for writing action research. Accordingly, a lack of research skills, knowledge of action research methodology, and theoretical guidance significantly affect teachers in completing their studies (Nagibova, 2019; Tindowen et al., 2019; Ulla, 2018; Zhou, 2012). If most teachers are not acquainted with the proper approach to action research, how will they write one? How will they proceed with a systematic mechanism to address the problems they identified at the classroom, school, or field level? In this

sense, the posited learning crisis and gaps may not be effectively addressed using action research as a strategic mechanism.

Sufficient knowledge in crafting the correct methodology in a specific research design is a must in working on a study. It bridges the results to the identified research problems through evidence in the presented approaches and techniques (Romero, 2020). It shares how systematically the findings are attained, and data are analyzed (Lunenburg, 2008). In one case, a specific action research design is crafted under participatory action research to solve social challenges and issues (Cox et al., 2021). Hence, contextualizing approach in action research necessitates its purpose.

With the surfaced concern, if there is no standard and dedicated approach to writing action research, how can teachers be more knowledgeable in this aspect? This matter will still concern teacher-researchers as they will struggle to continue their journey in providing concrete solutions from sound decisions and data-driven actions.

For experienced researchers, this issue might not be relevant. On the other hand, for many teachers who want to start with their action research, this issue will surely be one of the most significant hindering factors. In the Philippine public basic education, one of the professional competencies of a teacher is "research-based knowledge and principles of teaching and learning," the second strand of the first domain of the Philippine Professional Standards for Teachers (PPST) (DepEd Order No. 042, s. 2017). This competence requires teachers to work on research activities to help them improve their pedagogic practice. Thus, this issue is a stalemate to help them commence with a good action research study.

The current literature does not provide clear directions on how action research will specifically be carried out. It can work out in different methods or designs. Some outline triangulation designs, conduct multiphase action research projects, and analyze through statistical methods, while others through case studies (Morales 2016; Beard, Dale & Hutchins, 2007). Though, available synthesized literature also pointed out that action research is just an approach to research incorporating several techniques from different disciplines and contexts (Morales, 2016). Even in the Department of Education (DepEd) research management policy, only the minimum parts of action research are given (DepEd Order No. 16, s. 2017). Still, with this posing gap, there is a need to provide a specific guide and approach to work on action research, particularly in the basic education setting.

With the surfaced conditions, teachers' sufficient knowledge and competence in the strategic approaches of working and writing action research in basic education is a must. Since there is no available specific design and approach suited for basic education action research, the researchers delved into proposing a contextualized solution. Hence, this paper shall focus on providing a contextualized action research process design relevant to the needs of the basic education setting.

As action research focused on providing contextualized approach, this study sought to answer the following questions based on the analyzed problems. The research questions encompass different analysis layers to provide sufficient and comprehensive information in the problem it wants to address. Further, the output shall highlight a contextualized research process design for the SALIKSIK (Strategic Action for Learning, Innovation, Knowledge Systems, and Instructional Keystones) Research Program of Lopez East and Lopez West Districts to empower and innovate further its technical assistance provision and research management mechanisms.

First Phase: Preference Analysis as Basis for Process Localization

What are the preferred contextualized designs of the select SALIKSIK Research Program implementers for the design and development of an action research approach for basic education?

Second Phase: Design and Development of a Localized Basic Education

Action Research Approach for the SALIKSIK Research Program

1. What localized and responsive action research approach can be designed out of the preferred designs of the select SALIKSIK Research Program implementers as interfaced with the analyzed literature sources?

Third Phase: Evaluation of the Designed and Developed Localized Basic Education Action Research Approach for SALIKSIK Research Program

2. What are the acceptability and significance levels of the designed and developed Multi-Analysis Layered Nexus (MALN) approach as assessed by the SALIKSIK Research Program implementers towards a localized basic education action research design?
3. Is there a significant difference between the assessment of the acceptability and significance levels of the Multi-Analysis Layered Nexus (MALN) approach as assessed by the SALIKSIK Research Program implementers?
4. What recommendations are shared by the SALIKSIK Research Program implementers to further improve and develop the proposed contextualized basic education action research approach?

Materials and Methods

Grounded on the several analysis layers of the study, the researchers employed a multiphase analysis design of the mixed method research. The main structures are anchored on combining quantitative and qualitative data through various analysis stages (Creswell, 2014; Ghosh, 2016). Three (3) analysis stages identified in the research questions make it more appropriate for the current undertaking to use the multiphase analysis design. This specific approach aims to surface analyzed information from various stages to share a critical understanding of the problem and its concrete solutions (Burrows, 2013; Tashakkori & Teddlie, 2010). Similarly, this approach is applied in other research works with the same multiphase analysis to specifically map-out different perspectives and information sources of the problem to solve (Villenes, 2022; Villenes et al., 2018). The specific research approach follows the design and development research highlighting the following multiphase analysis structure: (1) Preference Analysis as Basis for Process Localization; (2) Design and Development of a Localized Basic Education Action Research Approach for the SALIKSIK Research Program; and, (3) Evaluation of the Designed and Developed Localized Basic Education Action Research Approach for SALIKSIK Research Program. Basically, this paper follows the designed approach developed in this academic undertaking.

The target of the study is to achieve process localization of action research in basic education, particularly for the SALIKSIK (Strategic Action for Learning, Innovation, Knowledge Systems, and Instructional Keystones) Research Program of Lopez East and Lopez West Districts. The researchers contextualized the specific process of working and writing action research suited for the needs of basic education settings, particularly in addressing organizational, academic, or instructional dilemmas. For the sets of research participants, the first phase involves five (5) key informants who shared their preference in localizing an action research approach. Thirty (30) respondents shared their assessment of the developed contextualized action research process for the third phase. These research participants are composed of the following SALIKSIK Research Program key persons: (1) SALIKSIK Leads and Committee Members; (2) School Head In-Charge of Governance and Operations (SHIGO); (3) School Head In-Charge of Research; (4) Research Technical Assistance (TA) Providers; (5) Teacher-Researchers; and, (6) External Partners and Consultants.

The first phase is carried out through individual semi-structured interviews through an online mechanism and structured literature review and analysis. Second, the researchers employed a design and development process to craft the localized action research approach. Third phase highlighted the acceptability and significance assessments of the developed contextualized approach in working and writing an action research study. For the instruments and tools, the researchers used the following: (1) a semi-structured interview questionnaire and guide; and, (2) acceptability and significance assessment questionnaires. The cited tools trace their bases from the study of Villenes (2022) with the same purpose to analyze the preferences and assess their acceptability and significance. Further, these tools underwent validation (e.g., construct, criterion) and reliability tests for the latter (e.g., internal consistency using Cronbach's Alpha). The data gathering instruments contained quantitative and qualitative entries to capture all aspects of data inputs. Moreover, this paper employed the required research ethics and principles appropriate for the design and development form of action research. The researchers used a non-disclosure agreement and informed consent forms to uphold the necessary codes in this type of scholastic undertaking. Data treatments included qualitative (interview) and quantitative (mean, independent t-test) analyses forms.

Results and Discussions

There are three (3) analysis layers carried out in this undertaking. These are as follows: (1) Preference Analysis as Basis for Process Localization; (2) Design and Development of a Localized Basic Education Action Research Approach for the SALIKSIK Research Program; and, (3) Evaluation of the Designed and Developed Localized Basic Education Action Research Approach for SALIKSIK Research Program. Each analysis layer has its research questions, and specific data-gathering approaches. This strategy is critical and comprehensive to understand the problem and propose solutions explicitly.

Preferred Localized Designs of the Select SALIKSIK Research Program Implementers for the Design and Development of Action Research Approach for Basic Education

This phase highlights the analysis of the preferred localized designs based on the interview results. This analysis layer is carried out through qualitative data analysis. This analysis focus considers the preference of the select key implementers of the SALIKSIK Research Program. Mostly, the center of the discussions is on what they want for a structured action research approach for basic education. This approach highlights their preference on what to do to guide teacher-researchers during their conduct of studies.

Table 1 presents the summary of the identified themes shared by the selected key informants for this process. They are composed of the following SALIKSIK Research Program key individuals: program lead; teacher-researchers; external partners from a state university, and from another SDO.

The analysis showed the three (3) key themes generated in the preference analysis. These themes are as follows: (1) employ mixed method research design; (2) organize analysis through multiphase approach; and, (3) localize process approach for basic education action research.

The first theme of contextualized design preference includes utilizing a mixed-method approach to combine quantitative and qualitative responses. Similarly, they want to consider qualitative inputs to quantitative data for a holistic approach and analysis. For the second theme, three recommendations were captured from the shared inputs. These recommendations include several analysis stages to highlight the problem focus and its intended solutions, mixed method design for multiple analysis stages, and highlighting problem analysis and intervention solutions in different sets. Lastly, the third theme recommends highlighting a specific process and guide in writing basic edu-

cation action research. Similarly, a particular approach to the operation of action research is needed unique to the needs of educational institutions.

Table 1. Analysis of the Preferred Localized Design as Basis for the Design and Development of Action Research Approach for Basic Education

Analyzed and Synthesized Inputs	Key Themes for the Localized Design Preferences
▪ Use mixed-method approach to combine quantitative and qualitative responses ▪ Consider qualitative inputs to quantitative data for a holistic approach and analysis	Employ mixed method research design
▪ Strategize several stages or phases to present the problem focus and its intended solution ▪ Use multiple analysis stages anchored on the mixed method design of research ▪ Highlight problem analysis and its intervention solutions in different sets	Organize analysis through a multi-phase approach
▪ Highlight the specific process of writing action research suited for basic education ▪ Specify process approach of writing action research for schools and learning centers unique for education institutions	Localize process approach for basic education action research

The provided qualitative response from the key SALIKSIK Research Program implementers shared an important perspective on which phase the researchers will start to localize the design and approach suited for basic education.

Using quantitative and qualitative data in action research is not new. Qualitative information through semi-structured interviews for an inductive-interpretive approach to maximize analytical potential is often practiced (Abdel Latif, 2021; Elliott, Smith & Lattimer, 2021; Madden & Tarabochia, 2021). Likewise, considering mixed methods in action research provided broader perspectives to address several problems (Christ, 2018). In other cases, multiple analyses in different phases characterized responsive action research in an education setting (Adugu, 2021; Rowe, Martine et al., 2021). Nevertheless, action research in the locale also uses the same approach and structure to highlight different analysis stages (Villenes, 2022; Villenes et al., 2018).

All key informants shared the same notion of gauging action research with quantitative and qualitative sources of information. Moreover, they all shared that a specific process should guide teacher-researchers in their study conduct. These recommendations are a sound basis to proceed with the subsequent analysis phase, which will require mapping out existing literature sources that align and correspond to these inputs.

After the preference analysis, the researchers investigated several literature sources as sound bases to interface these results to the existing ones. Literature review and analysis as a research method is a critical strategy to provide a sound contextualized basis for the target process approach. It is a form of knowledge production through systematic reviews and provides area overviews to synthesize findings and evidence on a meta-level (Snyder, 2019).

Several research studies from foreign literature employed multiphase, multistage, and multimethods design of research. These approaches capture the preferences shared by the SALIKSIK Program Lead Implementers. These studies include the works of DiEnno et al. (2021), Hassanpour et al. (2021), Singsungnoen et al. (2021), Ellerbrock et al. (2020), Monson et al. (2020), Andrews et al. (2019), Morley (et al. 2019), Lockhart et al. (2018), Josh-Artisensi et al. (2016), Cunningham et al. (2013), Todd (2012), and Dyment et al. (2010). All used strategic phases and multistage analysis to highlight their investigation of their solutions to the identified problems. These reviewed literature sources further proved that the target design is feasible with the existence of its bases. Moreover, it also shows that the existence of some of these studies fall beyond the range of basic education setting. Hence, there is no uniform approach in crafting and using one for the context of action research. It greatly depends on the researcher on which method, design, approach, or model will be used.

Aside from these foreign literature sources, the researchers also used local action research studies conducted in the district to provide additional samples and basis. Four (4) action research studies of one of the researchers also used a multiphase research design sample to analyze its contextualized process. These four papers of Villenes (2021), Villenes et al. (2018), Villenes et al. (2017), and Villenes et al. (2015) are conducted in DepEd Quezon, particularly at the said implementing districts of the SALIKSIK Research Program. These samples exemplify how multiphase analysis works out as a specific and responsive approach in working and writing action research. These studies are all considered in designing and developing a contextualized and responsive action research design approach for the SALIKSIK Research Program of Lopez East and Lopez West Districts.

Localized and Responsive Action Research Approach Designed and Developed Out of the Analyzed Preferences and Reviewed Literature

After analyzing the process preferences and the existing literature, the researchers crafted a localized basic education action research approach for the SALIKSIK Research Program. It aims to comprehensively capture different analysis stages and layers to highlight the problems the action research needs to address.

The researchers designed a localized and responsive action research approach suited for the basic education setting. The design is entitled “Multi-Analysis Layered Nexus (MALN) Approach.” This contextualized approach aims to provide a comprehensive framework for writing and working on action research for basic education setting.

The terms used in the title are formed from two of its critical phrases. The “Multi-Analysis” term refers to the multiphase approach of analyzing the research problems, discussing intervention solutions, and evaluating results. On the other hand, the “Layered Nexus” points out the layered approaches that are commonly described as a system structure where analyses are chunked and divided into different stages. However, these analysis layers are in nexus form as all are connected and gauged to one particular purpose. Thus, layered nexus is coined for this contextualized approach.

This approach shall gauge teacher-researchers to write detailed action research studies showing the (1) analysis of the research problem, (2) implementation of the strategic intervention or solution, and (3) analysis of the results. The contextualized action research design approach shall transcribe applications on the research questions, data gathering procedure, data analysis, and results discussion. Table 2 presents this aspect.

The MALN shall be a specific approach for a particular research method (e.g., quantitative, qualitative, mixed method) which will surface the input information, implementation process, and output assessment of the action taken to address the identified problem. Hence, the action research will show responsive approaches and results to address the pressing problems experienced in the basic education setting.

During the development process, the lead researcher framed the general design to work on its specific approach. He presented them to his co-researchers for discussion. The team recommended several inputs to enhance the design. Aside from these, the researchers asked for expert advice from internal and external committees of the SALIKSIK Research Program. These approaches enable the process to be more collaborative and consultative in nature.

Table 2. Analysis of the Preferred Localized Design as Basis for the Design and Development of Action Research Approach for Basic Education

Analysis Layers	**Common Action Research Designs in Basic Education**			
	Quasi- and Experiment Studies	*Design and Development Research*	*Descriptive Research Designs*	*Qualitative Inquiries and Approaches*
Analysis Layer 1	Pre-Implementation Phase	Analysis Stage	Phenomenon Determinant Phase	Phenomenon Determinant Phase
Analysis Layer 2	Implementation Phase	Development and/or Implementation Stage	Phenomenon Analysis Phase	Phenomenon Exploration and Analysis Phase
Analysis Layer 3	Post-Implementation Phase	Evaluation Stage	Output Development/ Proposal Phase	Recommendation Analysis Phase

The MALN shall be a specific approach for a particular research method (e.g., quantitative, qualitative, mixed method) which will surface the input information, implementation process, and output assessment of the action taken to address the identified problem. In Table 2, different action research designs are broken out into several analysis layers. For the experiment type of studies, analysis layers will focus on three stages – pre-implementation, implementation, and post-implementation phases. On the other hand, design and development action research will highlight a threefold approach – analysis stage, development and/or implementation stage, and evaluation stage.

The model's three-phase style for common descriptive research designs highlights the phenomenon determinant, phenomenon analysis, and output development/proposal phases. Last in the identified designs is for qualitative studies. Its three analysis layers include the phenomenon determinant, exploration and analysis, and recommendation analysis phases. These elements are critical to providing clear framework for its intent – to give localized approach in writing action research for basic education.

Two of the main features of the developed MALN approach is the inclusion of the focus approach matrix and the question-procedure-analysis design alignment. For the latter, the design alignment required for the contextualized approach analysis layer involve the research questions, data gathering procedure, and data analysis elements. Figure 1 presents its alignment structure.

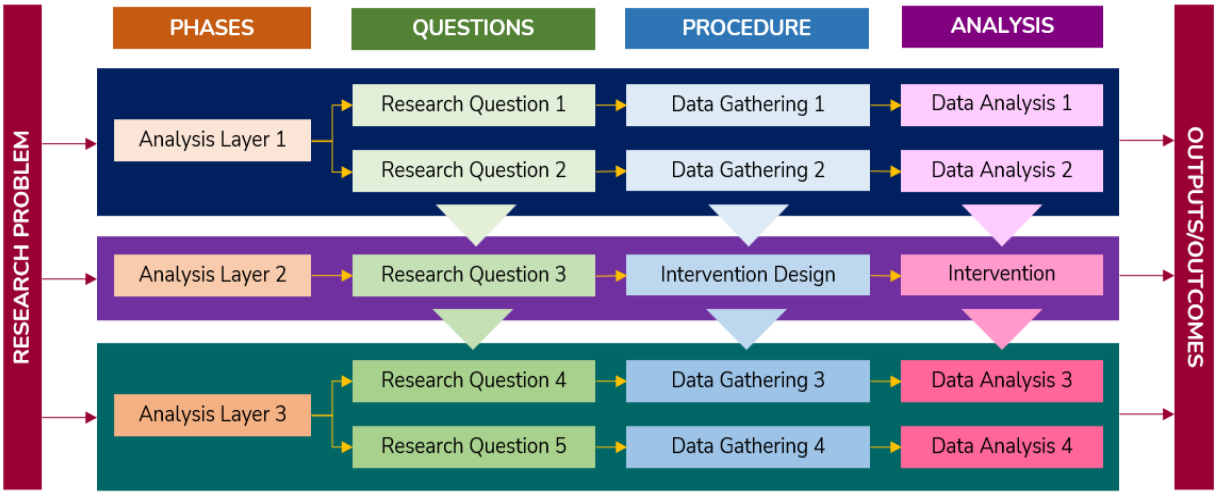

Figure 1. Question-Procedure-Analysis (QPA) Design Alignment Using the Focus Approach Matrix of the Multi-Analysis Layered Nexus (MALN)

Figure 1 depicts the Question-Procedure-Analysis (QPA) design alignment based on the proposed approach of the MALN. It shows design alignment using the focus approach matrix for its analysis phases, research questions, data gathering procedures, and data analysis structures. In this way, users of the MALN approach will be guided in its structures and flows. Each alignment in the QPA matrix may be complex but surely be a comprehensive approach to dealing with its identified problems. All start with a research problem, go with the action research as its strategic intervention and end with improved outputs and/or outcomes.

The focus analysis matrix presented in the previous table shows the framework to guide teacher-researchers in working with comprehensive action research. Instead of the typical one-way analysis, teacher-researchers will have a promising approach to show different analysis stages and perspectives along with their critical response approach to the research problems.

Though multiphase designs may be massive and complex, they will cover vast information not explored using other research designs by weaving several mixed approaches under one identified problem (Creswell, 2014). Moreover, it brings strong credibility to the analysis results (Brevik, 2017). In the same way, it creates meaningful value to research projects designed for implementation to solve critical problems in a learning institution. Several structured phases are essential for achieving significant results for action research (Mertler, 2021). These kinds of analyses provide strategic understanding and solutions to the pressing education problems identified in basic education settings (Villenes, 2022; Villenes, 2021).

Designing specific action research approach is critical in improving its purpose. This MALN model of action research for basic education brings pioneering approach which will help provide practical solutions to the current setting through its innovative design. In the same way, the Y-CAR (Youth-Creative Action Research) model is introduced to address a specific context through action research (Cox et al., 2021). Specific designs for a particular setting will leverage further the purpose of action research.

Hence, this proposed contextualized action research shows the responsive approach to the problems it identifies to provide concrete solutions. Moreover, its results in addressing the pressing

issues experienced in the basic education setting are highly comprehensive in addressing its identified organizational, academic, or instructional dilemmas. Making action research in basic education unique for its purpose is a commitment to quality and progress.

Acceptability and Significance Level Assessment of the Designed and Developed Multi-Analysis Layered Nexus (MALN) Approach

After the design and development process, the researchers tapped the assistance of the evaluators coming from the SALIKSIK Research Program key implementers. There are thirty (30) evaluators who shared their inputs to the developed contextualized research approach.

Table 3 contains the acceptability evaluation results. Moreover, Table 4 presents the significance evaluation findings. The acceptability level is divided into three (3) domains. These domains served as the criteria for its acceptability assessment focused on its technical soundness, quality comprehensiveness, and approach responsiveness. On the other hand, the significance criteria contain the same number of domains. It centres on research management and agenda applicability, professional standards alignment, and context relevance.

Table 3. Acceptability of the Designed and Developed Multi-Analysis Layered Nexus (MALN) Approach as Assessed by the SALIKSIK Research Program Implementers

Acceptability Domain	Acceptability Indicators	MS	QD	SD	AIR	DR
Technical Soundness (TS)	Provides appropriate literature basis for designing a specific approach	3.93	HA	.26	1.5	3
	Helps guides researchers in aligning the research focus	3.87	HA	.35	3	
	Allows technical integration of existing and established research designs and approaches	3.93	HA	.26	1.5	
	Total (TS)	**3.91**	**HA**			
Quality Comprehensiveness (QC)	Contains guided structures to outline the several examination phases or layers	3.87	HA	.35	3	2
	Gives illustrative and actual samples of multiphase action research studies	4.00	HA	.00	1	
	Ensures technical quality of the approach by giving specific and detailed proposal components	3.93	HA	.26	2	
	Total (QC)	**3.93**	**HA**			

Approach Responsiveness (AR)	Presents a specific research approach appropriate for a particular research design	3.93	HA	.26	2.5	1
	Guides researchers in providing a standardized approach based on practices and praxes	3.93	HA	.26	2.5	
	Gives a guiding framework and appropriate structure for conducting action research	4.00	HA	.00	1	
	Total (AR)	**3.96**	**HA**			
	Acceptability Level	**3.93**	**HA**			

Legend

MS: Mean Score
QD: Qualitative Description
SD: Standard Deviation
AIR: Acceptability Indicator Rank
DR: Domain Rank

3.26 – 4.00: Highly Acceptable (HA)
2.51 – 3.25: Acceptable (A)
1.76 – 2.50: Less Acceptable (LA)
1.00 -1.75: Not Acceptable (NA)

The acceptability level shows a high mean score of 3.93, interpreted as "highly acceptable." The breakdown of results came from the combined mean scores of its three (3) acceptability domains. First in rank is "approach responsiveness," with a mean score of 3.96. It is followed by "quality comprehensiveness," with an average of 3.93. Last on the list is the domain "technical soundness," with a mean score of 3.91. All are assessed as "highly acceptable" in nature. Among the indicators, the second domain's second criterion got a perfect evaluation score alongside the third domain's third criterion. These indicators are the (1) provision of illustrative and actual samples of multiphase action research studies as a guide in providing concrete exemplars based on the presented framework and (2) the guiding framework (e.g., focus approach matrix) and appropriate structure (e.g., analysis layers) in conducting action research specific to basic education context.

Acceptability criteria are critical in evaluating proposed models or designs. It sets the standards concerning the expected performance of a system or model that allows establishing its capacity to perform its determined function (Villenes, 2022; Garton et al., 2012). This evaluation standard also will enable leaders to improve their services built from their expertise and experiences (Garces et al., 2016). Hence, the developed MALN approach receives acceptable evaluation anchored on the standards from its program implementers.

Aside from the acceptability evaluation, the researchers also used significance assessment to determine the congruence to standards of the developed contextualized action research approach. It received a total score of 3.92, recognized as "highly significant." These mean scores came from the summary of the three (3) domains identified in this aspect. These domains and their respective mean scores are as follows: research management and agenda applicability, 3.98; professional standards alignment, 3.91; and, context relevance, 3.87. All three (3) received "highly significant" ratings.

Table 4. Significance of the Designed and Developed Multi-Analysis Layered Nexus (MALN) Approach as Assessed by the SALIKSIK Research Program Implementers

Significance Domain	Significance Indicators	MS	QD	SD	AIR	DR
Research Management and Agenda Applicability (RMAA)	Aligns with recommended standards and mandates of the basic education research management	4.00	HS	.00	1.5	1
	Supports research management and initiative mechanisms to empower the culture of research	4.00	HS	.00	1.5	
	Promotes sustainability of decisions through informed practices, sound actions, and research evidence	3.93	HS	.26	3	
	Total (RMAA	**3.98**	**HA**			
Professional Standards Alignment (PSA)	Conforms to the research mandates spelled out in the professional standards (PPST, PPSSH, PPSS)	3.87	HS	.35	3	2
	Supports the objectives of the professional standards through innovations and action research	3.93	HS	.26	1	
	Improves teaching, management, and supervision through informed practices, sound actions, and research evidence	3.93	HS	.26	2	
	Total (PSA)	**3.91**	**HS**			
Context Relevance (CoR)	Gauges critical problem appraisal toward addressing the identified education problem	3.80	HS	.41	2.5	3
	Provides technical guidance to establish the analyzed results	3.87	HS	.35	2.5	
	Establishes an avenue to explore and discuss different analysis perspectives	3.93	HS	.26	1	
	Total (CoR)	**3.96**	**HS**			
	Acceptability Level	**3.93**	**HS**			

Legend

MS: Mean Score
QD: Qualitative Description
SD: Standard Deviation
AIR: Acceptability Indicator Rank
DR: Domain Rank

3.26 – 4.00: Highly Acceptable (HA)
2.51 – 3.25: Acceptable (A)
1.76 – 2.50: Less Acceptable (LA)
1.00 -1.75: Not Acceptable (NA)

The highest point evaluation came from the first domain with a perfect assessment of 4.00, "highly significant." These indicators are the (1) alignment with recommended standards and mandates of the basic education research management guidelines and agenda in addressing problems in the education community and (2) the support mechanism on research management and initiative structures to empower the research culture in the basic education setting.

Significance assessment also conforms to the evaluation standard required from a developed model or output. It serves as an evaluation criterion of the designed action research approach that aims to determine its merit or worth serving as a basis for its evaluative judgments (Organisation for Economic Co-operation and Development, 2022). The same rationale also applies in this undertaking as the respondents share their evaluation of the level of the designed approach based on its target significance context (Villenes, 2022). Thus, the crafted action research approach conforms to the evaluation criteria expected from its functional performance.

The designed and developed contextualized MALN approach for basic education action research is acceptable and significant based on the parameters set out in the discussed criteria. With this, the SALIKSIK Research Program Implementers can use the model as it fits their necessities, addresses the relevance connections, and conforms to standards.

Significant Difference Between the Assessment on the Acceptability and Significance Levels of the Multi-Analysis Layered Nexus (MALN) Approach as Assessed by the SALIKSIK Research Program Implementers

It is also critical if the respondents share the same notion in their evaluation judgment for the acceptability and significance criteria. Hence, the researchers conducted a significance difference analysis to determine the cited purpose. With the help of the independent t-test, its significant difference is identified. The researchers used SSB to analyze the results and checked with another calculation from MS Excel. Table 5 presents the significant difference between the mean scores of the acceptability and significance levels.

Table 5. Significant Difference Between the Acceptability and Significant Levels of the Localized MALN Approach for Basic Education Action Research

Variables	Mean	Variance	Obs.	Pooled Variance	df	t Stat	Crit. Value	Decision
Acceptability Level	3.93	0.000633	3	0.001867	4	0.38	2.776	No significant difference
Significance Level	3.92	0.0031	3					

The results clearly indicate no statistically significant difference between the acceptability and significance levels as the computed t-score of 0.38 does not equal or exceed the critical value of 2.776 at 0.05 alpha value. There is no difference between the assessment scores the SALIKSIK Research Program Implementers gave for the developed MALN approach in terms of the acceptability and significance criteria.

Conformance to assessment criteria is a standard for quality. Hence, this paper achieved this critical notion based on the assessment results and significant difference testing. Conformance to standards is crucial for building its target capacities (Hvidston et al., 2019). The substantial appre-

ciation in the SALIKSIK Research Program implementers for the developed contextualized approach may further reinforce characterizations of quality and standard (Morgan et al., 2022).

With these results, the designed contextualized action research approach conforms to standards. The MALN Approach will benefit its intended users from the SALIKSIK Research Program.

Recommendations for Improvement of the Localized Basic Education Action Research Process

Though the study received outstanding acceptance and significance assessments, the researchers still asked for the respondents' recommendations to improve further the developed contextualized basic education action research process. Table 6 presents the summary of the suggestions shared by the key SALIKSIK Research Program implementers.

Synthesized Recommendations	F
Provide capacity building for the detailed utilization of the contextualized action research approach with a definite time and schedule of attendance	3
Consider the skills and abilities of the teachers in the organizational context as one of the bases of providing detailed instruction of the contextualized approach	2
Include in the QPA design alignment matrix the data analysis (e.g., statistical treatment) suited for each problem focus	1

There are three (3) synthesized recommendations from the evaluators. Six (6) of them provided critical suggestions for improving the contextualized approach in writing action research. These recommendations center on the provision of capacity building, consideration of the skills and abilities of the teacher-researchers, and the inclusion of data analysis techniques in the framework. Three (3) recommendations shared the same notion of building capacity for utilizing the MALN approach. Two (2) individuals provided inputs on the adjustments for the skills and abilities of the end-users. Lastly, one (1) requested the data analysis treatments for inclusion in the framework. These recommendation inputs are critical to the next phase of this academic undertaking. The researchers already rolled-out its first phase of discussing this approach for the utilization of the SALIKSIK Research Program. Aside from this, they already shared a copy of the approach to DepEd Division of Quezon for possible utilization of the entire organization.

Though there are thirty respondents, most shared positive comments and feedback instead of giving recommendations. One said that it is relevant to the current setting as the education landscape shift from the pandemic to the post-pandemic world. Most comments called it much suited for classroom teaching action research. They want to study the approach for immediate application in their action research studies. Moreover, they provided great comments and feedback for the developed MALN approach.

Conclusion

The preferred localized design for action research approach in basic education includes employing mixed method research design, organization of analysis through a multiphase approach, and

localization of the process unique for basic education action research. Moreover, fourteen reviewed literature showed significant multiphase approach in doing studies, particularly the action research studies and research projects. The first phase provided a critical basis for developing a contextualized process approach for writing basic education action research. Grounded on the analyzed and synthesized bases, the researchers designed and developed the "Multi-Analysis Layer Nexus (MALN)" approach for basic education action research. It highlights a focus approach matrix for each analysis layer and a question-procedure-analysis (QPA) design alignment as the SALIKSIK Research Program implementers guide. The designed contextualized process approach received highly acceptable and highly significant ratings. No significant difference is seen in the analysis of its acceptability and significance assessments. Recommendations included the conduct of MALN approach capacity building, skills and abilities profile, and data analysis treatments in the QPA matrix.

Acknowledgment

The researchers acknowledged their respective institutions for the support of the completion of this study. These institutions are as follows: Department of Education – Division of Quezon – Lopez East District, Lopez West Elementary School Bldg. 1, Cogorin Ibaba NHS, Amontay NHS; Technological University of the Philippines – Lopez; Laguna State Polytechnic University – Lopez Satellite Campus; Philippine Normal University South Luzon; and, Department of Education – Division of Batangas City. A special dedication and felicitation are given to the SALIKSIK Research Program committees for providing critical inputs for improving the approach. Moreover, they shared their appreciation to the DepEd Division of Quezon for choosing the first paper produced by the lead researcher on the MALN approach as its best research paper during the DCBER 2022.

References

Abelardo, L. J., Lomboy, M. A. A., Lopez, C. C., Balaria, F. E., & Subia, G. S. (2019). Challenges encountered by the national high school teachers in doing action research. *International Journal of English Literature and Social Sciences (IJELS), 4*(4).

Abdel Latif, M. M. M. (2021). The research-teaching nexus in a graduate CALL course: An action research study. *Journal of Computer Assisted Learning, 37*(1), 69-79. http://dx.doi.org/10.1111/jcal.12468

Abrenica, J. T. & Cascolan, H. M. S. (2022). Impact of action research in education: Experiences and challenges faced by teachers. *International Journal of Scientific and Management Research, 5*(2), 1-15. http://doi.org/10.37502/IJSMR.2022.5201

Adelman, C. (1993). Kurt Lewin and the origins of action research. *Educational Action Research, 1*(1), 7-24. https://doi.org/10.1080/0965079930010102

Adugu, E. (2021). Contextualizing action research. *International Journal of Adult Education and Technology*, *2*(3), 31-46. https://doi.org/10.4018/IJAET.2021040103

Andrews, N. C. Z., Pepler, D. J., & Motz, M. (2019). Research and evaluation with community-based projects: Approaches, considerations, and strategies. *American Journal of Evaluation, 40*(4), 548-561. http://dx.doi.org/10.1177/1098214019835821

Beard, J., Dale, P., & Hutchins, J. (2007). The impact of e-resources at Bournemouth University 2004/2006. *Performance Measurement and Metrics*, *8*(1), 7-17.

Brevik, L. M. (2017, August 22-25). *The emergent multiphase design: How mixed methods research adds value to reading research project.* [Oral presentation]. European Conference on Educa-

tional Research (ECER), Copenhagen, Denmark. https://www.eera-ecer.de/ecer-programmes/conference/22/contribution/41058/

Briggs, S. (2015). *Action research: The ultimate problem-solving strategy for educators.* InformED Open Colleges. https://www.opencolleges.edu.au/informed/features/action-research/

Burrows, T. J. (2013). A *preliminary rubric design to evaluate mixed methods research*. [Unpublished Dissertation, Virginia Polytechnic Institute and State University]. VTechWorks. https://vtechworks.lib.vt.edu/bitstream/handle/10919/19324/Burrows_T_D_2013.pdf

Christ, T. W. (2018). Mixed methods action research in Special Education: An overview of a grant-funded model demonstration project. *Research in the Schools, 25*(2), 77-88.

Cox, R., Heykoop, C., Fletcher, S., Hill, T., Scannel, L., Wright, L., Alexander, K., Deans, N., & Plush, T. (2021). Creative action research. *Educational Action Research, 29*(4), 569-587. In this aspect, this review can deduce that action research requires a systematic process to leverage further its purpose towards pedagogical improvement and school performance enhancement.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative and mixed method approaches* (4th ed.). SAGE Publications, Inc.

Cunningham, N., Knorr, K., Lock, P. E., & Vajoczki, S. L. (2013). Breaking down the boundary between high school and university chemistry. *Collected Essays on Learning and Teaching, 6*, 65-70.

Department of Education (DepEd) Order No. 16, s. 2017. *Research Management Guidelines.*

Department of Education (DepEd) Order No. 042, s. 2017. *National Adoption and Implementation of the Philippine Professional Standards for Teachers.*

DiEnno, C., Martz, C., Collins, L., & Watanabe, M. (2021). The exhibit and beyond: Attendees, collaborating organizations, and decisionmakers responding to a photovoice project. *Journal of Community Engagement and Higher Education, 13*(3), 1-15.

Dyment, J. E. & O'Connel, T. S. (2010). The quality of reflection in student journals: A review of limiting and enabling factors. *Innovative Higher Education, 35*(4), 233-244. http://dx.doi.org/10.1007/s10755-010-9143-y

Ellerbrock, C. R., Main, K. M., & Virtue, D. C. 92020). An international study of programs that prepare teachers of young adolescents. *Current Issues in Middle Level Education, 25*(1), 2-6. http://dx.doi.org/10.20429/cimle.2020.250102

Elliot, K., Smith, G., & Lattimer, H. (2021). Power in schooling and research: The role of action research. *Schools: Studies in Education, 18*(2) 324-246. http://dx.doi.org/10.1086/716628

Garces, G. A., Bonjour, E., & Rakotondranaivo, A. (2016). New product acceptability evaluation and improvement model with knowledge reuse. *IFAC Papers Online, 49*(12), 1104-1109. https://doi.org/10.1016/j.ifacol.2016.07.639

Garton, L., Moody, L., & Woodcock, A. (2012, July 1-4). *Acceptability: What does it mean to experts in information technology and product design?* [Oral presentation]. Design Research Society Conference 2012, Bangkok, Thailand.

Ghosh, R. (2016). Mixed methods research: What are key issues to consider? *International Journal of Adult Vocational Education and Technology, 7*(2), 32-41.

Great Schools Partnership. (2014). *Action Research.* The Glossary of Education Reform for Journalists, Parents, and Community Members. https://www.edglossary.org/action-research/

Hassanpour, B. & Sahin, N. P. (2021). Technology adoption in architectural design studios for educational activities. *Technology, Pedagogy and Education, 30*(4), 491-509. http://dx.doi.org/10.1080/1475939X.2021.1897037

Husted, M. & Tofteng, D. (2021). Why time is a core challenge for participatory action research. *Educational Action Research, 29*(4), 553-568. http://dx.doi.org/10.1080/09650792.2021.1959365

Hvidston, D. J., Range, B., Anderson , J., & Quirk, B. (2019). An explanation of the supervisory model used by elementary principal supervisors in the State of Missouri. *School Leadership Review, 14*(1), 4, 51-61.

Josh-Artisensi, J. L., Olson, D. M., & Nahm, A. Y. (2016). Development of a self-assessment tool to facilitate decision-making in choosing a long term care administration major. *Educational Gerontology, 42*(1), 1-18. http://dx.doi.org/10.1080/03601277.2015.1051414

Koshy, V. (2010). *Action research for improving educational practice: A step-by-step guide.* SAGE Publications.

Lac, V. T., Antunes, A. C., Daniel, J., Mackey, J. (2022). What is the role of adult facilitators in critical participatory action research? Employing affective labor while navigating the politics and the perils alongside minoritized youth researchers. *Educational Policy, 36*(1), 142-168. http://dx.doi.org/10.1177/08959048211059200

Langdon, J., Cameron, S., Krieger, N., & Shani, A. (2021). Moving with the movements: Participatory action research in/action. *Canadian Journal of Action Research, 22*(1), 87-104. https://doi.org/10.33524/cjar.v22i1.538

Lockhart, W., Wuetherick, B., & Joorisity, N. (2018). Exploring the foundations for student success: A SoTL journey. *Collected Essays on Learning and Teaching, 11*, 11-21.

Lunenburg, F. C. (2008). *Writing a successful thesis or dissertation: Tips and strategies for students in the social and behavioral sciences.* Corwin Press.

Madden, S. & Tarabochia, S. L. (2021). Untangling methodological commitments in writing research: Using collaborative secondary data analysis to maximize interpretive potentials of qualitative data. *Written Communication, 38*(3), 447-476. http://dx.doi.org/10.1177/07410883211010166

Malenfant, K. J., Hinchliffe, L. J., & Gilchrist, D. (2016). Assessment as action research: Bridging academic scholarship and everyday practice. *College & Research Libraries, 77*(2), 140-143. http://dx.doi.org/10.5860/crl.77.2.140

Mertler, C. A. (2021). Action research as a teacher inquiry: A viable strategy for resolving problems of practice. *Practical Assessment, Research & Evaluation, 26*, 19, 1-14.

Monson, D., Krupa, E., Lesseig, K., & Casey, S. (2020). Developing secondary prospective teachers' ability to respond to student work. *Journal of Mathematics Teacher Education, 23*(2), 209-232. http://dx.doi.org/10.1007/s10857-018-9420-8

Monem, R. & Cramer, E. D. (2022). Utilizing action research to integrate curriculum, instruction, and assessment in middle school classrooms. *Middle School Journal, 53*(3), 5-14. http://dx.doi.org/10.1080/00940771.2022.2047370

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 (IJRES), 2*(1), 156-165.

Morgan, Ann M., Jobe, R. L., Rebecca, L., Konopa, J. K., & Downs, L. D. (2022). Quality assurance, meet quality appreciation: Using appreciative inquiry to define faculty quality stan-

dards. *Higher Learning Research Communications, 12*(1), 98-111. http://dx.doi.org/10.18870/hlrc.v12i1.1301

Morley, D., Van Rossum, T., Richardson, D., & Foweather, L. (2019). Expert recommendations for the design of a children's movement competence assessment tool for use by primary school teachers. *European Physical Education Review, 25*(2), 524-543. http://dx.doi.org/10.1177/1356336X17751358

Nacario, C., Osea, G. B., Foronda, V., Lirag, M. T., & Lirag, B. (2014). Readiness and acceptability of Information and Communication Technology integration in basic education. *Asia Pacific Journal of Multidisciplinary Research, 2*(1), 166-169.

Nagibova, G. (2019). Professional development: The challenges of action research implementation in Kazakhstan. *International Academy of Web of Scholar, 2*(9(39), 17-24. https://doi.org/10.31435/rsglobal_wos/30092019/6691

Organisation for Economic Co-operation and Development (OECD). (2022). *Evaluation criteria.* OECD. https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm

Romero, L. M. (2020). *The importance of the section "materials and methods" in scientific articles.* Comunicar. https://www.revistacomunicar.com/wp/school-of-authors/importance-in-the-section-materials-and-methods-in-the-scientific-articles/

Rowe, N., Martine, R., Buck, R., & Mabingo, A. (2021). Teaching collaborative dexterity in higher education: Threshold concepts for educators. *Higher Education Research and Development, 40*(7), 1515-1529. http://dx.doi.org/10.1080/07294360.2020.1833843

Sagor, R. (2000). *Guiding school improvement with action research.* Association for Supervision and Curriculum Development (ASCD).

Sampson, R. J. (2021). Evolving understandings of practitioner action research from the inside. *Educational Action Research, 29*(3), 414-428. http://dx.doi.org/10.1080/09650792.2020.1842222

Singsungnoen, K., Wannapiroon, P., & Nilsook, P. (2021). Development of smart human resource planning system within Rajabhat University. *Higher Education Studies, 11*(2), 139-146.

Spencer Clark, J., Porath, S., Thiele, J., & Jobe, M. (2020). *Action research.* New Prairie Press.

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research, 104,* 333-339. https://doi.org/10.1016/j.jbusres.2019.07.039

Tashakkori, A. & Teddlie, C. (2010). *SAGE handbook of mixed methods in social & behavioral research.* SAGE Publications, Inc.

Tindowen, D. J., Guzman, J., & Macanang, D. (2019). Teachers' conception and difficulties in doing action research. *Universal Journal of Educational Research, 7*(8), 1787-1794. http://dx.doi.org/10.13189/ujer.2019.070817

Todd, R. J. (2012). School libraries and the development of intellectual agency: Evidence from New Jersey. *School Library Research, 15*, 1-29.

Ulla, M. B. (2018). Benefits and challenges of doing research: Experiences from Philippine public school teachers. *Issues in Educational Research, 28*(3), 797-810.

Villenes, R. M. (2022). *Designing flexible instructional delivery models for Alternative Learning System – Senior High School Program*. [Unpublished doctoral dissertation]. Southern Luzon State University.

Villenes, R. M. (2021, December 13-15). *Empowering learning supervision in DepEd Lopez Districts: Transforming experiences in distance learning settings through Integrated and Re-*

mote Technical Assistance (IRTA). [Oral presentation]. DepEd Division of Quezon – Division Conference of Basic Education Researchers (DCBER) 2021, Lucena City.

Villenes, R. M., Igliane-Villenes, M., & Alcaraz, A. M. R. (2018). Increasing the learning performance and experiences of the Accreditation and Equivalency (A&E) learners through MELMA (Mobile-based Enhancement Learning Material). *KnE Social Sciences,* 1046-1063. http://dx.doi.org/10.18502/kss.v3i6.2438

Villenes, R. M. (2017). Development of eLearning Material for the Enhanced Learning Session (eLM-ELS) of ALS Lopez West: A Proposed Supplementary Tool for the Accreditation & Equivalency (A&E) Program. *The Quezonian Educators, 4*(1), 237-250.

Villenes, R. M. (2015). Introducing collaborative action in the implementation of Alternative Learning System (ALS) programs and projects in Lopez West: Towards reforming conventional practices to responsive education services. *The Quezonian Educators, 2*(1), 217–242.

Zhou, J. (2012). Problems teachers face when doing action research and finding possible solutions. *Chinese Education & Society, 45*(4), 68-80. http://dx.doi.org/10.2753/CED1061-1932450405