



University of Southern Mindanao
EXTENSION SERVICES OFFICE
Kabacan, North Cotabato



DETAILED PROPOSAL

A. BASIC INFORMATION

1. **Title of the Project:** Strengthening mother-tongue based education of elementary teachers in Deped Cotabato/MBHTE BARMM through instructional materials development and validation.

2. **Proponents(s)**

Component 1: Development of high-quality mother-tongue based instructional materials in elementary mathematics that effectively engage and educate students.

2.1 Name: PHILIP LESTER P. BENJAMIN

2.2 Designation: Component 1 Leader

2.3 Component 1 members: Leorence Tandog, Debbie Marie Verzosa, Florie Jane Tamon, Rowel Madio, Roel Valenton, Anna Jean Garcia, Leonard Paleta

2.4 College/ Unit: Graduate School/College of Science and Mathematics

2.5 Address: Osias, Kabacan, Cotabato

2.6 Telephone Number (s): 09338245352

2.7 Fax Number: none

2.8 Email Address: plbenj@usm.edu.ph

Component 2: Validation of mother-tongue based instructional materials developed for elementary mathematics through feedback from teachers, students, and parents.

2.9 Name: SANDRA A. NANDING

2.10 Designation: Component 2 Leader

2.11 Component 2 members: Merian Rubio, Jeaneth Licaros, Daryl Mae Mamon, Jonald Pimentel, Jennifer Pama, Honey Vincent Valle

2.12 College/ Unit: College of Science and Mathematics

2.13 Address: Mercado Street, Kabacan, Cotabato

2.14 Telephone Number (s): 09169284643

2.15 Fax Number: none

2.16 Email Address: nsnanding@usm.edu.ph

Implementing Agency

- a. Lead Agency: USM Graduate School/College of Science and Mathematics
2. Collaborating Agency (s): Deped Cotabato/MBHTE BARMM
 3. **Project Duration:** One year
 4. **Project Location:** Cotabato/BARMM

5. Total Budget Requirement

- 6.1. Budget Requested: P60,000
- 6.2. Agency Counterpart



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B. TECHNICAL DESCRIPTION

1. Rationale

The United Nations has declared the period between 2022 and 2032 as the International Decade of Indigenous Languages to bring attention to the endangered status of many indigenous languages and to mobilize resources for their preservation, revitalization, and promotion. In the Philippines, Republic Act No. 10533, known as the Basic Education Act, emphasizes the importance of using languages understood by learners, and the curriculum is based on the principles of Mother Tongue-Based Multilingual Education. The Department of Education also promotes the use of indigenous languages through its Indigenous Peoples Education Program, but requires a working orthography, primer guide to literacy, vocabulary in various domains, a grammar sketch, and learning materials before it can be officially recognized and used as a medium of instruction in schools.

Additionally, the Department of Education also provides training to teachers to effectively teach in an indigenous language and provide support for the development of instructional materials. The use of indigenous languages in education has been shown to be effective in improving learning outcomes, particularly in reading and writing, and in promoting cultural identity and self-esteem among indigenous learners.

However, the implementation of these programs faces challenges such as lack of resources and expertise in developing materials and training teachers in indigenous languages. It is important that the government and other stakeholders continue to invest in and support the preservation, revitalization, and promotion of indigenous languages to ensure their survival and to empower indigenous communities.

It is also important to engage with the indigenous communities and involve them in the development and implementation of programs related to their languages. This includes consulting with them on the development of orthography, primer guides, vocabulary, grammar sketches and learning materials, as well as involving them in teacher training and curriculum development.

Furthermore, promoting and preserving indigenous languages should not be limited to education, it should be integrated in all aspects of life. The government and other stakeholders should also promote the use of indigenous languages in media, government services, and other areas of public life. This can be done by providing translation and interpretation services, creating media content in



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indigenous languages, and encouraging the use of indigenous languages in government and other public service settings.

Overall, the International Decade of Indigenous Languages and the efforts of the Philippines government to promote the use of indigenous languages in education provide an opportunity to address the critical situation of many indigenous languages and to empower indigenous communities. However, it is important to sustain these efforts and to involve indigenous communities in the development and implementation of programs to ensure their success and long-term impact.

It's also worth noting that preserving indigenous languages is not only important for the communities that speak to them, but also for linguistic and cultural diversity as a whole. Indigenous languages often contain unique knowledge and perspectives that can contribute to the global understanding of history, culture, and the environment. Additionally, the loss of an indigenous language can also mean the loss of traditional practices, stories, and other cultural heritage that are passed down through generations.

Moreover, it is important to recognize that language preservation and revitalization is not a one-time effort, but a continuous process. It requires ongoing commitment and resources from government, organizations, and communities. This can include funding for language documentation and archiving, language revitalization programs and workshops, and community-based language programs. Furthermore, community-based language programs are particularly effective in revitalizing endangered languages as they are often led by local speakers and have community support.

In conclusion, preserving and promoting indigenous languages is a critical effort that requires the collaboration of government, organizations, and communities. It is essential to involve indigenous communities in the development and implementation of programs, provide ongoing support and resources, and recognize the importance of indigenous languages for linguistic and cultural diversity, and for the preservation of traditional practices and cultural heritage.

The rationale behind this extension project to strengthen mother-tongue based education through instructional materials development and capacity building for elementary teachers in the DepEd Cotabato Division is rooted in several key considerations:

1. Promoting linguistic and cultural diversity: The use of mother-tongue as the medium of instruction in the early years of education has been recognized as an effective way to promote linguistic and cultural diversity. By providing students with the opportunity to learn in their mother-tongue, the project can help to



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preserve and promote the linguistic and cultural heritage of the students in the DepEd Cotabato Division.

2. Improving student learning outcomes: Research has shown that students who learn in their mother-tongue have better academic outcomes compared to students who learn in a language that is not their mother-tongue. This project aims to improve student learning outcomes by providing students with instructional materials that are tailored to their linguistic and cultural background, and by building the capacity of teachers to effectively teach in the students' mother-tongue.

3. Addressing the needs of students: This project aims to address the specific language and cultural needs of students in the DepEd Cotabato Division by developing instructional materials that are tailored to their needs and by providing teacher training that is aligned with the curriculum and the needs of the students.

Overall, this extension project aims to enhance mother-tongue based education in the DepEd Cotabato/MBHTE BARMM Division by providing students with instructional materials that are tailored to their linguistic and cultural background and by building the capacity of teachers to effectively teach in the students' mother-tongue. This can help to improve student learning outcomes and promote linguistic and cultural diversity in the region.

2. Objectives

General objective:

To improve mother-tongue based education of elementary school teachers in DepEd Cotabato/MBHTE BARMM by developing and validating instructional materials.

Specific objectives:

1. To develop high-quality mother-tongue based instructional materials in elementary mathematics that effectively engage and educate students.
2. To validate mother-tongue based instructional materials developed for elementary mathematics through data analysis and feedback from teachers, students, and parents.

At the end of the extension activity, it is expected that:

- a. educational resources in mathematics are created that are tailored to the students' mother tongue, which will help to make learning more meaningful and effective. The materials will be developed are based on the



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curriculum and will be validated through testing and feedback from teachers and students.

- b. validated instructional materials will be used to support classroom instruction and will be evaluated for their effectiveness in improving student learning outcomes.

3. Methodology

The methodology for implementing this project will be divided into three main phases: development, implementation, and evaluation.

Pre-implementation/Development Phase (Social Preparation):

- ✓ Finalization of methodology, ethics, and permission protocols, MOA
- ✓ Conduct profiling or needs assessment within DepEd Cotabato/MBHTE BARMM to identify the specific language and cultural context of the students.

Implementation Phase:

- ✓ Develop and refine existing instructional materials based on the curriculum and the identified needs of the teachers.
- ✓ Validate the instructional materials through pilot testing with teachers, students, and parents.

To do this, we have the following.

PRE-IMPLEMENTATION/Development Phase:

- a. Methodology, ethics, MOA, and permission protocols will be finalized.

Ethics:

- Obtain informed consent from participants.
- Ensure confidentiality and anonymity of participants.
- Follow ethical principles and guidelines for research involving human subjects.

Permission protocols:

- Obtain necessary permissions and approvals from relevant authorities such as DepEd Cotabato/MBHTE BARMM and the school where the extension project will be implemented.
- Establish a Memorandum of Agreement (MOA) outlining the roles and responsibilities of all parties involved in the project.

- b. Needs assessment

A profiling or needs assessment will be conducted to identify the specific language and cultural context of the students, which can be used in the development of materials that are tailored to their needs. A needs



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assessment will also be conducted to identify the main difficulties in students in learning math. This will be done through surveys, informal interviews, or online meetings.

IMPLEMENTATION Phase

a. Develop and refine existing instructional materials based on the curriculum and the identified needs of the teachers.

i. Curriculum Alignment: A thorough review of the elementary mathematics curriculum and standards will be conducted to ensure that the instructional materials align with the curriculum. Additionally, the identified needs of the teachers will be taken into consideration during the development and refinement process.

ii. Materials Development: A team of experts in mathematics education and instructional design will be assembled to develop the instructional materials.

iii. Review and Feedback: The instructional materials will be reviewed by the team and feedback will be solicited from teachers and other experts in the field to ensure that the materials are of high quality and effectively meet the needs of the students.

iv. Revisions: Based on the feedback received, revisions will be made to the instructional materials as necessary. This will ensure that the materials are accurate, up-to-date, and aligned with the curriculum.

v. Formatting and Production: The instructional materials will be formatted and produced in a professional manner, using appropriate design and layout techniques to make them visually appealing and easy to use.

vi. Quality Control: Quality control measures will be in place to ensure that the instructional materials are free of errors and meet the standards of excellence.

vii. Pilot Testing: The instructional materials will be pilot tested with a small group of teachers, students, and parents to assess their effectiveness and gather feedback for revisions.

viii. Revisions and Improvements: Based on the feedback, revisions and improvements will be made to the instructional materials as necessary.



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b. Validate the instructional materials through pilot testing with teachers, students, and parents.

i. Selection of Pilot Testing Participants: A representative sample of teachers, students, and parents will be selected to participate in the pilot testing of the instructional materials. This sample will be chosen based on the specific language and cultural context of the students and the needs of the teachers.

ii. Preparation: The pilot testing participants will be provided with an overview of the instructional materials.

iii. Data Collection: Data will be collected through a variety of methods such as observation, interviews, surveys, and assessments. The data will be collected from teachers, students, and parents.

iv. Feedback and Revisions: Feedback from the pilot testing participants will be used to make revisions and improvements to the instructional materials as necessary.

4. Revision and writing the final form

An online meeting will be regularly scheduled between USM extensionists, and DepEd Cotabato/MBHTE BARMM teachers/representatives to discuss revisions of supplementary materials of topics which are about to be covered in DepEd regular schedule. The materials will be written in manner that can be best understood by the students.

5. The extension project will produce refined versions of supplementary materials in coordination with DepEd Cotabato/MBHTE BARMM teachers, students, and parents.

6. The process will continue until supplementary materials of good quality is produced and uploaded in the page. Enhanced quality of learning in the basic education is expected from this extension project. This project targets wide subscription of teachers.

VALUES EDUCATION/REORIENTATION

Values education and re-orientation can be an important aspect of this extension project to strengthen mother-tongue based education through instructional materials development and capacity building for elementary teachers in the DepEd Cotabato Division.



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Values education can be incorporated into the instructional materials and teacher training program to help students develop positive attitudes, beliefs, and behaviors that align with the school's mission and vision. This could include topics such as respect, responsibility, honesty, and cooperation.

Re-orientation can be an important aspect of the project, as it can help to shift the focus of education from a traditional emphasis on rote learning to a more holistic approach that prioritizes the development of critical thinking, problem-solving, and communication skills. This can be achieved through the development of instructional materials that are aligned with the needs of the students and the curriculum and by providing teacher training that focuses on effective teaching strategies, assessment, and curriculum development.

Additionally, involving community members and other relevant stakeholders in the project can help to promote a shared understanding of the importance of mother-tongue based education and the role it plays in preserving linguistic and cultural diversity. This can help to build support for the project and ensure that it is sustainable in the long term.

REPORT WRITING

The final report will have the following methodology.

- i. Data Collection: Gather all the data collected during the project including feedback from participants, and any other relevant information.
- ii. Report Outline: Develop a clear and concise outline for the report, including the introduction, methodology, results, discussion, conclusion, and recommendations sections.
- iii. Writing the Report: Write the report in a clear and concise manner, using appropriate language and formatting. Use tables, figures, and appendices as needed to present the data and results effectively.
- iv. Review and Editing: Review the report multiple times to ensure that it is free of errors and that the information is presented clearly and accurately. Have others review the report for feedback and make revisions as necessary.
- v. Final Review: Conduct a final review of the report to ensure that all the necessary information is included and that the report is ready for submission.



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7. Work Plan

Activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Pre-Implementation												
Finalization of methodology, ethics, and permission protocols, MOA												
Conduct profiling or needs assessment												
IMPLEMENTATION												
Development and refining of existing IMs												
Validation of the instructional materials												
REPORT WRITING												
Writing the final report												

Results Framework

Outputs	Outcome	Impact
Developed and validated mathematics instructional materials for mother-tongue based education.	Improved proficiency in the mother tongue among students. Increased use of mother-tongue as a medium of instruction in mathematics classrooms.	Improved mathematics academic performance and learning outcomes for students. Increased cultural pride and self-esteem among students. Stronger linguistic and cultural identity among students. Improved quality of education in the area.



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A. BASIC INFORMATION	
1. Project Title	Strengthening Barangay High Schools: Validating and Implementing Representation Approach-Based Learning Materials for Independent Study of Mathematics in Remote Schools
Component 1	Component 1. Building Capacity of Teachers in Instructional Development'
Component 2	Component 2. Building Capacity of Teachers in the Conduct of Action Research
Component 3	Component 3. Development and Validation of Representation Approach-Based Learning Materials for Independent Learning of Mathematics
Component 4	Component 4. Implementation of Representation Approach- Based Learning Materials for Improved Learning of Mathematics
2. Proponent/s Indicate Name Academic Rank, Office	<p>Name: PROF. LORENCE C. TANDOG Designation: Project Leader and Component Leader 3 College/ Unit: Department of Math & Stat/College of Science & Mathematics</p> <p>Name: PROF. LEONARD PALETA Designation: Component Leader College/ Unit: Department of Math & Stat/College of Science & Mathematics</p> <p>Name: PROF. DEBBIE MARIEB. VERZOSA Designation: Component Leader 2 College/ Unit: Department of Math & Stat/College of Science & Mathematics</p> <p>Name: PROF. PHILIP LESTER BENJAMIN & PROF. JUPITER PILONGO Designation: Component Leader 4 College/ Unit: Department of Math & Stat/College of Science & Mathematics</p>
2.1. Email Address	lctandog@usm.edu.ph
2.2. Contact Number	09466115568
3. Lead Unit/College	Department of Math & Stat/CSM
3.1. Collaborating Unit/College	
3.2. Partner Agency	DepEd Cotabato
4. Thematic Area	<input checked="" type="checkbox"/> Quality Learning Skills Development and Literacy <input type="checkbox"/> Food Security and Poverty Reduction <input type="checkbox"/> Social Development, and Strong Institutions



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	<input type="checkbox"/> Good Health and Well-being <input type="checkbox"/> Preservation of Culture <input type="checkbox"/> Innovations in Science, Engineering, and Technology <input type="checkbox"/> Environmental Protection, Conservation and Risk Reduction <input type="checkbox"/> Sustainable Entrepreneurship and Management	
5. Sustainable Development Goal/s	<input type="checkbox"/> No Poverty <input type="checkbox"/> No Hunger <input type="checkbox"/> Good Health <input checked="" type="checkbox"/> Quality Education <input type="checkbox"/> Gender Equality <input type="checkbox"/> Clean Water and Sanitation <input type="checkbox"/> Renewable Energy <input type="checkbox"/> Good Jobs and Economic Growth <input type="checkbox"/> Innovation and Infrastructure <input type="checkbox"/> Reduced Inequalities <input type="checkbox"/> Sustainable Cities and Communities <input type="checkbox"/> Responsible Consumption <input type="checkbox"/> Climate Change <input type="checkbox"/> Life Below Water <input type="checkbox"/> Life on Land <input type="checkbox"/> Peace and Justice <input type="checkbox"/> Partnership for the Goals	
6. Sector/Discipline		
7. Project Duration	Start Date: January 02, 2025	Completion Date: December 31, 2025
8. Project Location / Service Area	North Cotabato	
9. Total Budget Requested (Php)	Php 70,000.00	Fund Source: Fund 01

B. TECHNICAL DESCRIPTION

1. **Need-based Rationale** (State rationale based on current set-up, the need, your solution, and connect) Please refer to Magbanua, G.G. (n.d.) Writing a Need-based Rationale for Extension Proposal, TeknoGiya University of Southern Mindanao.



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Rationale

Barangay high schools, formerly known as barrio high schools, were established in 1964 to provide wider access to secondary education (Orata, 1979). Since then, additional barangay high schools have opened with the passage of RA 6054 or the "Barrio High School Charter" in 1969. The establishment of barangay high schools is considered as equalizing opportunity for all Filipino children to access education regardless of their place of residence or economic condition.

The performance of Philippine barangay schools has always been viewed to be inferior. In 1987 the Department of Education (DepEd) temporarily halted the opening of barangay high schools with acknowledgement that the quality of instruction in most of the barangay high schools suffered as evidenced by poor results in national achievement tests (DepEd DO 69, s. 1987). The quality of education in barangay high schools could not be sufficiently maintained due to a lack of experienced teachers and funding (Ishida, 1995) resulting in a lack of quality material resources and infrastructures (Bai, 2023). However, due to the insistent demand of the local communities for secondary education and the pressing need to improve access to education in remote areas, barangay high schools continued to operate and increased in number.

Teacher shortage is a critical issue in many rural areas around the world. This shortage is magnified in barangay high schools which serve as entry employment for inexperienced teachers who at the same time are forced to teach out-of-field subjects due to teacher shortages or limited class sections to handle in remote schools. Covid 19 exposed the challenges of the digital divide and students in barangay high schools were further disadvantaged because they had no access to materials and tools needed for remote and independent learning (Gutierrez and Bilefsky, 2021). These challenges continue this post-pandemic as DepEd schools continued cancelation of face-to-face classes or shortened class periods during extreme weather conditions.

Self-regulated and independent study is vital in cases where teachers are not available to facilitate learning. Effective learning materials significantly support independent learning since resources that can be learned without needing the assistance of a teacher can empower students to take control of their studies, learn at their own pace, and develop self-discipline and independent thinking. Research shows that supplemental printed materials significantly facilitate successful learning of math concepts (Brown and Gilmer, 2009) and self-instructional worked examples are effective in the development of both conceptual and procedural knowledge (Sheldon, 2013).

In 2021, we initiated a multi-dimensional approach to respond to the challenges that emerged from the urgent educational adaptations driven by the pandemic through material and technology tools development. Our project introduced teaching innovations that utilized interactive elements, visual features, storytelling, and manipulable representations. Various studies have shown that these features and tools enhance learning (De las Peñas & Bautista, 2008), facilitate visualization (Taka, Taka, & Budinski, 2010), and develop creativity (Shelomovskiy & Nosulya, 2012). Representation is an important element in the study of mathematics and is considered at the heart of cognitions associated with mathematical activity (Kaput, 1987).

The results of our study showed significant improvements in students' understanding of mathematics and science concepts. Anchoring from the positive outcome of the research project, the faculty and graduate students of PhD Ed and MST Mathematics programs engaged lesson study, produced research lessons and Learning Activity Pages (LAPs) that use various representation approaches. The learning resources are designed in a manner that students can learn essential concepts and skills with minimal support or even without the assistance of a teacher. The initiative established a structure for a Professional Learning



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Community (PLC) where teachers and experts work collaboratively for professional development and improved quality of learning. This endeavor provided a venue for sharing and transfer of pedagogies. The materials are now ready for validation and use by target students, thus this project.

The proposed implementation of representation approach-based learning materials for independent study of mathematics concepts aims to address the scarcity of quality teachers and other unique educational challenges faced by students in barangay schools and promote equitable access to quality education for all Filipino students regardless of geographic location. The rationale behind this extension project is rooted in several key considerations:

1. **Mitigating the effect of teacher scarcity/unavailability.** In the absence of quality teachers, students can utilize carefully designed self-instructional Learning Activity Pages (LAPs) to develop essential mathematics skills and concepts.
2. **Enhancing learning outcomes.** The learning material allows students to learn at their own pace ensuring the concept is fully grasped or the skill is learned before moving on to the next material. Students can fit their learning experience to their needs that could potentially lead to better learning commitment and engagement. It also encourages collaborative learning among students fostering a community where knowledge and skills are collectively constructed and shared.
3. **Promoting lifelong learning.** The materials do not focus only mathematics contents instead uses these contents as tools to develop important mathematics skills such as pattern recognition, measurement, number sense and problem solving; and soft skills such as critical thinking, and adaptability. Development of traits that allow students to learn new information and skills on their own is a key competency in our rapidly changing society. Self-guided study improves capabilities, enhances self-efficacy and unlocks student's full potential.
4. **Improving the status of education in barangay high schools.** Barangay high schools remain the least option for students. Most are underpopulated because the quality of instruction continues to be below par with municipal or national high schools. These schools serve the underprivileged and marginalized population and deserve all the support a university can extend. The learning materials can help improve the quality of mathematics learning in remote schools. Empowering barangay high schools will boost the image and credibility of this type of school as a provider of basic education. In the long term, an improved image of barangay high schools can offer a solution to the continuous overcrowding of municipal and national high schools.

Overall, this extension project aims to strengthen education in barangay high schools through the development of quality material resources for independent study of mathematics thereby improving access to quality education among marginalized communities.

2. **Objectives** (State specific objectives based on Knowledge, Skills, and Attitude/Practice (KSA/P))

General objective: This project aims to enhance the mathematics education received by students in barangay high schools in DepEd Cotabato with the use of carefully designed and validated self-instructional learning materials.

Specific objectives:

1. Strengthen math teachers' capability to develop representation-based self-instructional materials, and conduct action research
2. Engage teachers in collaborative work of developing and validating learning materials.
3. Enhance mathematics performance and numerical literacy among barangay high school students through implementation of developed learning materials
4. Determine if there is a significant improvement in students' performance and mathematics skills before and after use of developed instructional materials.



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3. Expected Output/s (State in quantifiable form)

At the end of the extension activity, it is expected that:

1. Teachers are empowered with knowledge and skills in designing and developing material resources that are effective for students' self-guided study, and in the conduct of action research
2. A professional learning community is sustained where teachers and experts will continue to work collaboratively and share pedagogies for improved learning quality.
3. Learning Activity Pages (LAPs) are created that are tailored to mathematical abilities and needs for independent study of target clients.
4. LAPs are validated, pilot-tested, and packaged and/or lesson exemplars are implemented for online uploading.
5. LAPs are used to supplement learning of important mathematics content and skills for improved numerical literacy among students in barangay high schools.
6. Students in barangay high schools improved in terms of mathematics performance and numerical literacy.
7. Final versions of LAPs are copyrighted.

4. Review of Literature (Present related research/projects/activities that have been conducted).

5. Results Framework

Implementation			Results	
Inputs (State the materials needed in the conduct of activities)	Activities (State the major activities of the project to attain the objectives)	Outputs (State the expected quantifiable outputs based on the activities conducted)	Outcomes (State the objectives of the project based on KSA/P of the partner-beneficiaries)	Impact (State the possible impact of the project either of the following: socio-economic, peace and order, environment, literacy and numeracy, etc.)



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6. Methodology (Brief description of how the project will be implemented to attain the objectives).				
6.1. Pre-implementation (Social Preparation)				
<p>Development Phase:</p> <ol style="list-style-type: none">1. Baseline data<ul style="list-style-type: none">• current mathematics capabilities of students in Barangay High Schools.• existing materials/learning resources available in barangay high schools• performance of barangay high schools in division/nationwide evaluations from secondary sources.• number of school graduates who continued to the next level of education (ex. junior to senior HS) or admission rate of graduates to universities.2. Needs assessment<ul style="list-style-type: none">• specific needs of students that can be addressed through material development.• weaknesses of students that should be considered when designing the LAPs• contextual factors to learning.3. Brainstorming, initial planning and training<ul style="list-style-type: none">• Teacher-participant orientation• Brainstorming on topics, skills, and lesson design• Initial planning, topic assignment, and timelines• Training of teacher participants4. Development, validation, and Refinement of developed LAPs<ul style="list-style-type: none">• Validation of developed LAPs• Pilot-testing of developed materials• Refinement based on validation and pilot testing• Development of additional learning materials based on needs5. Packaging and reproduction of LAPs<ul style="list-style-type: none">• Final lay-out and graphic design• Printing and packaging of final version of LAPs• Reproduction of LAPs for implementation				



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6.2. Implementation (Community Development)

Implementation Phase:

- Provide ongoing support to school heads and teacher participants during the implementation of the materials in the classroom.
- Immediate evaluation of students' outputs (answers in the LAPs) as basis of continuing learning support to students and lesson refinement
- Monitor and evaluate the implementation of the materials through teacher and student feedback.

Evaluation Phase:

- Assess the effectiveness of the extension project in improving student learning outcomes.
- Assess the effectiveness of the developed instructional materials in fostering lifelong learning.
- Analyze the impact of the developed materials in the school performance and in addressing some challenges of barangay high schools particularly in mitigating teacher scarcity

To do this, we have the following.

Development Phase:

1. For baseline data we will
 - Use researcher-made mathematics achievement test and standardized (if available) numerical literacy test to gather data on current mathematics capabilities of students in Barangay High Schools.
 - Conduct ocular visit and interview with teachers and school heads about existing materials/learning resources available in barangay high schools
 - Use available secondary sources to describe the performance of barangay high schools in division/nationwide evaluations.
 - Survey on the number of school graduates who continued to the next level of education (ex. junior to senior HS) or admission rate of graduates to universities.
2. For needs assessment, we will
 - Conduct diagnostic or pretest to identify specific needs of students that can be addressed through material development.
 - Interview teachers to identify weaknesses of students that should be considered when designing the LAPs.
 - Site visit to the target school and interview with school heads to identify other contextual factors that may be considered during project implementation.



Republic of the Philippines
UNIVERSITY OF SOUTHERN MINDANAO
Kabacan, Cotabato
Tel. No. (064) 572-2638
e-mail address: vprde@usm.edu.ph



Management
System
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ID 9108634167

OFFICE OF THE VICE PRESIDENT FOR RESEARCH, DEVELOPMENT AND EXTENSION

UNIVERSITY RESEARCH DEVELOPMENT & EXTENSION COMMITTEE

APPROVAL SHEET

I. BASIC INFORMATION

Project Title: Strengthening mother-tongue based education of elementary teachers in Dep-Ed
Cotabato/MBHTE BARMM through instructional materials development and validation

Project Leader: Philip Lester Benjamin
Duration/ Period of Conduct: January 2023- December 2023
Implementing Agency/Unit: USM
Location/Research Station: USM
Budget Detail: P60,000.00 (Extension Fund-05)

URDEC No.:

___ Program
___ Project
___ Study
___ Others

II. ACTION TAKEN:

☒ Approved

☐ Disapproved

Remarks: _____

Date of Implementation: January - December 2023

RESEARCH REVIEW COMMITTEE

LYDIA C. PASCUAL
Director, RDO

ABUBAKAR A. MURRAY
Director, PICRI

EFREN E. MAGULAMA
Director, USMARC

MARY JOY S. CAÑOLAS
Director, ESO

DEBBIE MARIE B. VERZOSA
Director, RPSO

Statistical Pool

Approved by:

MA. TEODORA N. CABASAN
VP for RDE

II. REVIEWED BY:

Statistical Pool

Date Jan. 20, 2023 Remarks

III. FOR ISSUANCE OF:

☒ Notice to Proceed
☒ Special Order
☐ Research Contract
☐ Policy Guidelines (IPR, PNS, IACUC Permit, others _____)

IV. OUTPUTS:

___ Progress Report (Quarterly)
___ Financial Report
___ Completion Report
___ Last Quarter Honorarium released upon submission of terminal/publishable article
___ Terminal Report/Publishable Article Submitted

Recorded by: _____



Republic of the Philippines
UNIVERSITY OF SOUTHERN MINDANAO
Kabacan, Cotabato
Tel. No. (064) 572-2638
e-mail address: vprde@usm.edu.ph



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OFFICE OF THE VICE PRESIDENT FOR RESEARCH, DEVELOPMENT AND EXTENSION

UNIVERSITY RESEARCH DEVELOPMENT & EXTENSION COMMITTEE

APPROVAL SHEET

I. BASIC INFORMATION

Title: Strengthening Barangay High Schools: Validating and Implementing Representation Approach-Based Learning Materials for Independent Study of Mathematics in Remote Schools

Author(s): Leorence C. Tandog

Duration/ Period of Conduct: January 2025 – December 2025

Implementing Agency/Unit: USM

Location/Research Station: USM

Budget Detail: Php 70,000.00

URDEC No.:

Program
X Project
Study
Others

II. ACTION TAKEN:



Approved



Disapproved

Remarks: _____

Date of Implementation: _____

RESEARCH REVIEW COMMITTEE

LYDIA C. PASCUAL
RDO Director

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Extension Director

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IPTBDO Director

MA. TEODORA N. CARABAN
Publication Director

JURHAMID C. MILAN
USMARC Director

Statistical Pool

Approved by:

DEBBIE MARIE B. VERZOSA
VP for RDE

III. REVIEWED BY:

Statistical Pool _____ Date _____ Remarks _____

IV. FOR ISSUANCE OF:

____ Notice to Proceed
____ Special Order
____ Research Contract
____ Policy Guidelines (IPR, PNS, IACUC Permit, others _____)

V. OUTPUTS:

____ Progress Report (Quarterly)
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