

B.1 PROPOSAL FORMAT/TEMPLATE FOR EXTENSION PROJECT

J.H. Cerilles State College – Extension Office | Fillable template – replace the instructional text in each box with your own content.

PART I PROJECT SUMMARY

A. Title:	Science Teaching Buddies: A Training-Embedded Community of Practice for Out-of-Field and Out-of-Specialization Secondary Science Teachers Three phases/projects: (1) Grade 9 Science Content Mastery; (2) Grade 10 Science Content Mastery; and (3) Cross-Specialization Science Content Mastery and Resource Exchange.																						
B. Implementer:	School of Teacher Education (STE), J.H. Cerilles State College (JHCSC)																						
C. Project Team	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Project Team Member</th><th style="width: 20%;">Expertise</th><th style="width: 55%;">Functions/Responsibilities</th></tr> </thead> <tbody> <tr> <td>Daril Jane B. Edulan, PhD – Project Leader</td><td>Chemistry General Science</td><td>Provides overall leadership and coordination of the three-year extension program; oversees project planning, implementation, monitoring, evaluation, documentation, partnership coordination, and reporting; serves as facilitator, resource speaker, mentor, content expert, and moderator of the Science Teaching Buddies Virtual Community of Practice (vCoP).</td></tr> <tr> <td>Cheryl May A. Badilles</td><td>Biology and General Science</td><td rowspan="5">All project team members shall serve as facilitators, resource speakers, subject-matter experts, peer mentors, instructional-material/resource developers, assessment and evaluation support personnel, and moderators of the Science Teaching Buddies Virtual Community of Practice (vCoP)/private Facebook group. They shall participate in the planning, implementation, monitoring, documentation, evaluation, and reporting of the three project phases and provide technical and</td></tr> <tr> <td>Edna Q. Sumagang</td><td>Biology and Science Education</td></tr> <tr> <td>Efefany Jumarito</td><td>Chemistry</td></tr> <tr> <td>Febe Keith Jumoc</td><td>Biology</td></tr> <tr> <td>Ferlor Angel Rodriguez</td><td>Biology</td></tr> <tr> <td>Gina O. Sapon</td><td>Physics</td><td></td></tr> </tbody> </table>			Project Team Member	Expertise	Functions/Responsibilities	Daril Jane B. Edulan, PhD – Project Leader	Chemistry General Science	Provides overall leadership and coordination of the three-year extension program; oversees project planning, implementation, monitoring, evaluation, documentation, partnership coordination, and reporting; serves as facilitator, resource speaker, mentor, content expert, and moderator of the Science Teaching Buddies Virtual Community of Practice (vCoP).	Cheryl May A. Badilles	Biology and General Science	All project team members shall serve as facilitators, resource speakers, subject-matter experts, peer mentors, instructional-material/resource developers, assessment and evaluation support personnel, and moderators of the Science Teaching Buddies Virtual Community of Practice (vCoP)/private Facebook group. They shall participate in the planning, implementation, monitoring, documentation, evaluation, and reporting of the three project phases and provide technical and	Edna Q. Sumagang	Biology and Science Education	Efefany Jumarito	Chemistry	Febe Keith Jumoc	Biology	Ferlor Angel Rodriguez	Biology	Gina O. Sapon	Physics	
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D. Target Group	Secondary science teachers in the Schools Division of Zamboanga del Sur who are teaching outside their formal field of specialization. This includes non-science majors teaching science and science majors teaching branches outside their specialization.															
E. Cooperating Agencies	Schools Division Office of Zamboanga del Sur–DepEd															
F. Timeframe	Three (3) years: January 2027–December 2029. Year 1 – Phase 1/Project 1: Grade 9, Third Term. Year 2 – Phase 2/Project 2: Grade 10, First–Third Terms. Year 3 – Phase 3/Project 3: Cross-Specialization Science Content Mastery and Resource Exchange.															
G. Financial Requirement	Indicative three-year requirement: PHP 300,000.00, subject to approved institutional rates, actual participant numbers, partner support, procurement requirements, and allowable expenditures. Year 1: PHP 90,000; Year 2: PHP 100,000; Year 3: PHP 110,000															

H. Impact Statement	The project will strengthen the conceptual understanding, science content mastery, and preparedness of out-of-field and out-of-specialization secondary science teachers. It will provide continuing expert and peer support, access to instructional resources, and a sustainable virtual Community of Practice. In the longer term, the project is expected to contribute to improved science teaching practices and more responsive science instruction in participating schools.
I. Summary	SCIENCE TEACHING BUDDIES is a three-year research-informed extension program implemented through three distinct but interconnected projects. Phase 1 addresses Grade 9 Third-Term content needs; Phase 2 addresses Grade 10 Science across Terms 1–3; and Phase 3 addresses cross-specialization science needs and establishes structured resource exchange. A continuing Science Teaching Buddies virtual Community of Practice supports all phases through discussion, consultation, mentoring, and resource sharing. Each phase will have its own TNA, implementation records, assessment/evaluation, outputs, and terminal reporting.

PART II PROJECT DETAILS

A. Background and Justification.

Out-of-field teaching occurs when teachers are assigned to teach subjects outside their formal academic preparation or specialization. In secondary science, this concern is particularly significant because science encompasses several specialized domains, including Biology, Chemistry, Physics, and Earth and Space Science. A teacher may be formally prepared in one branch but be assigned to teach another.

The proponent’s dissertation, “Community of Practice Experiences of Out-of-Field Science Teachers,” identified challenges among out-of-field science teachers, including inadequate training, insufficient resources, difficulty preparing for unfamiliar science topics, limited confidence, and professional isolation. The study explored a virtual Community of Practice Intervention using a Facebook-based professional learning community.

The intervention provided opportunities for expert guidance, resource sharing, peer discussion, mentoring, and continuing professional support. Findings indicated that participation in the virtual Community of Practice contributed to improved confidence, efficacy, professional engagement, and science teaching practices.

Building from these research findings, the proposed extension program translates the research-informed intervention into a sustained three-year extension service. The central focus is content mastery: teachers will receive support on science concepts and topics that they are required to teach but that fall outside their formal specialization.

The program will be implemented in three progressive phases. Phase 1 will respond to Grade 9 Third-Term needs; Phase 2 will address Grade 10 Science across three terms; and Phase 3 will expand to cross-specialization science content and formalize resource exchange among teachers. Twice-monthly sessions will be complemented by a continuing Science Teaching Buddies virtual Community of Practice where participants can ask questions, share materials, discuss classroom concerns, and consult peers and experts.

A.1 Alignment to Global, National and Institutional Frameworks

A.1.1 S.D.G. (Sustainable Development Goal)

SDG 4 – Quality Education. The project strengthens teacher capacity through continuing professional learning, content development, collaborative learning, and accessible online support.

A.1.2 A.C.H.I.E.V.E.

Advanced and Accessible Lifelong Learning through continuing teacher development; Centralized Human Capital Development through strengthening science teacher capacity; Harmonized SDG-Based Research and Innovation through translating research findings into extension; Integrated Real-Time Data and Analytics through TNA, attendance, assessments and evaluations; and Effective and Efficient Public Service through accessible professional support.

A.1.3 R.E.S.I.L.I.E.N.T.

The project supports research-driven and responsive education, empowered communities, partnerships, learning excellence, enhanced research culture, professional excellence and workforce development, and technology integration through a virtual Community of Practice.

A.1.4 T.A.B.A.N.G.E.

The project primarily contributes to Technology and Literacy initiatives through digital professional learning and science resources; community empowerment through teacher capacity building; and inclusive professional development through accessible participation.

B. Specific Objectives.

- 1. Identify the science content areas, concepts, misconceptions, and learning needs of participating teachers through systematic training needs assessments.*
- 2. Strengthen teachers' conceptual understanding and content mastery of science topics outside their formal specialization.*
- 3. Provide regular expert-led and peer-supported learning opportunities through content mastery sessions.*
- 4. Establish and sustain a virtual Community of Practice for continuing consultation, discussion, mentoring, and professional support.*
- 5. Facilitate the development, sharing, adaptation, and utilization of appropriate science instructional materials and resources.*
- 6. Assess changes in participants' science content knowledge and perceived preparedness in handling identified out-of-field science topics.*
- 7. Develop a sustainable cross-specialization network of science teachers capable of supporting one another beyond formal training sessions.*
- 8. Document and evaluate the implementation and outcomes of the three projects to inform succeeding JHCSC extension initiatives.*

C. Logical Framework.

Particular	Indicators	Means of Verification	Assumptions
Goal:	Improved capacity of out-of-field and out-of-specialization science teachers to teach assigned science content.	Terminal reports; evaluation; participant feedback.	Teachers remain engaged and partner schools support participation.
Purpose:	Teachers demonstrate improved conceptual understanding and content mastery of identified difficult science topics.	Pre/post assessments; session outputs; reflections.	Participants attend and actively participate.
Outputs:	Three projects implemented; TNAs completed; twice-monthly sessions conducted; vCoP maintained; resources developed/shared.	TNA reports; attendance; training materials; screenshots; reports.	Partners and subject experts are available.
Outcomes:	Increased content knowledge and preparedness; increased use of science resources; sustained peer support.	Assessment results; evaluations; reflections; resource repository.	Participants apply learning in classroom practice.
Activities:	Partnership coordination, TNA, orientation, expert sessions, content mastery workshops, Q&A, peer sharing, resource exchange, vCoP, assessment and evaluation.	Programs; attendance; certificates; photos/screenshots; reports.	Timely funding, coordination, and participation.

D. Methodology.

Activity	Description	Target Participants	Timeframe	Responsible	Expected Output
1. Partnership and Orientation	Coordinate with DepEd, school heads and science coordinators; present the three-year framework	Participating teachers and partner personnel	Year 1; before Project 1	Project Leader/Team and partners	Partnership arrangements and participant list

	and participant arrangements.				
2. Training Needs Assessment	Identify difficult science concepts, misconceptions and topics outside participants' specialization. Conduct a new/refined TNA for each phase.	Participating science teachers	Before each project	Project Team	TNA report and prioritized topics
3. Baseline Assessment	Administer content assessment before each project to establish baseline knowledge.	Participants	Beginning of each project	Project Team	Baseline assessment data
4. Twice-Monthly Content Mastery Sessions	Conduct expert-led and peer-supported sessions focused on difficult and upcoming science concepts, conceptual clarification, problem solving and application.	Participating teachers	Years 1–3	Project Team/Subject Experts	Training sessions and learning materials
5. Science Teaching Buddies vCoP	Maintain a private Facebook community for questions, consultation, mentoring, discussion, resource sharing and continuing support.	All registered participants	Years 1–3	Project moderators	Active online community and discussion threads
6. Resource Exchange	Collect, review, adapt and share lesson materials, demonstrations, simulations, laboratory activities and other science resources.	Participating teachers	Across phases; major focus Year 3	Project Team/Participants	Shared digital resource collection
7. Post-Assessment and Evaluation	Assess learning gains and participant perceptions of relevance, usefulness and applicability.	Participants	Each project	Project Team	Assessment and evaluation reports

8. Recognition and Reporting	Recognize participation/contribution and prepare annual and terminal accomplishment reports.	Participants and project team	End of each project/year	Project Leader/Team	Certificates, reports and documentation
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E. Line-Item Budget.

Budget Item	Particular Item	Estimated Cost	Total
A. Operating Cost			
1. Supplies and Materials	Science learning materials, printed modules, handouts, activity sheets, reference materials, laboratory/activity supplies, and other instructional materials to be provided to participating teachers	₱60,000	
2. Communication	Communication and internet/data allowance for participating teachers and project team during online training, consultations, mentoring, and vCoP activities	₱35,000	
3. Documentation	Printing, reproduction of attendance sheets, certificates, evaluation forms, project records, and other documentation requirements	₱5,000	
4. Instructional and Resource Development	Development, reproduction, and enhancement of science instructional materials, digital resources, content mastery resources, and materials for the Science Teaching Buddies vCoP	₱40,000	
5. Faculty Load/Implementation Allowance	Faculty load/implementation allowance for project team members serving as facilitators, resource speakers, subject-matter experts, peer mentors, assessment personnel, instructional-material developers, and vCoP moderators, subject to applicable institutional rules	₱70,000	

B. Travel/Food			
6. Fare/Transportation	Transportation expenses for approved face-to-face coordination, project activities, launching, monitoring, and other necessary official travel	₱10,000	
7. Launching/Orientation	Project launching, orientation, coordination with partner schools and agencies, initial TNA activities, and related face-to-face activities	₱40,000	
C. Miscellaneous			
8. Miscellaneous	Other allowable and necessary project expenses not otherwise classified, subject to applicable accounting and auditing rules	₱40,000	
	TOTAL PROJECT BUDGET	₱300,000	

PART III
DOCUMENTARY ATTACHMENTS
Research output used as the basis for the extension program

The proposed SCIENCE TEACHIGN BUDDIES extension program is grounded in the documented experiences of out-of-field science teachers and in the intervention described in the dissertation, *Community of Practice Experiences of Out-of-Field Science Teachers* (Edulan, 2024). The research addressed a practical problem encountered by teachers who were assigned to teach science outside their formal preparation or specialization. The study focused on the difficulties experienced by these teachers, the ways they responded to those difficulties, the support they needed, and their experiences while participating in a virtual Community of Practice Intervention (vCoPI). The research provides a relevant basis for an extension program because it examined an actual professional concern and implemented a support mechanism intended to respond to that concern.

Before the intervention, the participating out-of-field science teachers described science teaching as challenging because they were sometimes required to handle content beyond their formal preparation. Their experiences reflected inadequate training or background knowledge, difficulty accessing appropriate resources and specialist assistance, limited confidence in teaching unfamiliar science content, and a sense of professional isolation. Teachers nevertheless developed ways of coping with these conditions. They searched for information independently, reviewed science content before teaching, used available instructional resources, sought assistance from colleagues or mentors, and adapted their teaching approaches to address the needs of their learners. Their accounts also showed that their commitment to students and their desire for professional growth motivated them to continue learning despite the challenges they encountered (Edulan, 2024).

In response to these identified needs, the study implemented a virtual Community of Practice Intervention through an online environment supported by continuing communication, expert input, peer interaction, discussion, mentoring, problem solving, and sharing of teaching resources. The intervention provided participants with opportunities to ask questions, clarify difficult science concepts, exchange experiences and instructional materials, receive guidance from more knowledgeable colleagues or experts, and obtain encouragement from fellow teachers. This arrangement is consistent with the broader concept of a community of practice, in which practitioners learn collectively around concerns arising from their shared practice and improve their practice through regular interaction (Wenger-Trayner & Wenger-Trayner, 2015).

The experiences reported during participation in the vCoP showed that the online community became a source of professional and interpersonal support. Participants were able to interact with other teachers who understood the challenges of teaching outside one's specialization, while expert input provided opportunities for clarification and professional learning. Resource sharing reduced the difficulty of locating materials for unfamiliar topics, and continuing conversations allowed teachers to raise concerns as they encountered them in their teaching practice. The intervention therefore functioned not simply as a series of training activities but as an ongoing support environment in which teachers could learn from experts and from one another (Edulan, 2024).

The qualitative findings further documented changes in participants' experiences after their involvement in the virtual Community of Practice. The study described movement from apprehension toward a more positive outlook, from being reserved toward becoming more active, and from feeling unsupported toward feeling included, accepted, supported, and appreciated. Participants also described strengthened confidence and motivation, greater professional engagement, and the development and application of science content and pedagogical knowledge. The findings identified collaborative learning and mutual assistance, emotional support and encouragement, expert input and professional development, knowledge sharing and application, mentorship and validation, practical support and resource sharing, and a psychologically safe space for communication as important features of the intervention (Edulan, 2024).

Viewed as an intervention-oriented research experience, these findings demonstrate a progression from an identified professional problem, through the implementation of a structured support mechanism, toward reported improvements in teachers' experiences and professional participation. Although the evidence was qualitative and was based primarily on participants' accounts and descriptions of their experiences, the findings provide documented evidence of change within the context of the intervention. The research therefore offers a useful foundation for an extension initiative that seeks to address the continuing needs of teachers who are assigned to science content outside their formal specialization. The evidence does not establish a universal or statistically generalizable effect; rather, it demonstrates how the vCoP functioned for the teachers who participated in the study and identifies mechanisms that may be translated into an extension setting (Edulan, 2024).

The dissertation's recommendations provide a direct bridge to the proposed extension program. The study recommended sustained professional support for out-of-field teachers, continuing opportunities for professional development, mentorship, access to teaching resources, regular expert-led learning opportunities, peer collaboration and resource sharing, and the continued development and expansion of the virtual Community of Practice. It also recommended conducting a thorough needs assessment before professional development activities so that support can respond to the actual needs of participating teachers, as well as considering the integration of the community-based approach into existing professional learning structures such as Learning Action Cells (Edulan, 2024).

The program will establish the Science Teaching Buddies vCoP as a continuing space where participants can ask questions, discuss classroom concerns, exchange instructional materials, seek clarification from peers and experts, and receive professional encouragement. The vCoP will complement, rather than replace, the face-to-face or online content mastery sessions that will be organized according to the identified needs of participating teachers.

The proposed extension program also translates the progression observed in the research into a continuing professional support model. Teachers who initially experience uncertainty when assigned unfamiliar science content can be provided with opportunities to strengthen their conceptual understanding, consult subject-area experts, learn from colleagues, and access relevant instructional resources. As participation continues, the program will encourage teachers to move from seeking assistance to actively contributing resources, experiences, explanations, and solutions to the community. In this way, the research basis supports an extension approach that combines content mastery with sustained peer learning, mentoring, and resource exchange.

The proposed program will therefore use a continuing vCoP across its three phases. The first phase will respond to Grade 9 Third-Term science content needs, the second phase will address Grade 10 science content across the First through Third Terms, and the third phase will provide a broader cross-specialization space for teachers who handle science subjects or branches outside their formal specialization. Each phase will generate its own evidence of participation, learning needs, activities, outputs, and evaluation, while the vCoP will provide continuity across the three years.

References

- Edulan, D. J. B. (2024). Community of practice experiences of out-of-field science teachers [Doctoral dissertation, University of Science and Technology of Southern Philippines].
- Wenger-Trayner, E., & Wenger-Trayner, B. (2015). Communities of practice: A brief introduction. Wenger-Trayner. <https://www.wenger-trayner.com/wp-content/uploads/2015/04/07-Brief-introduction-to-communities-of-practice.pdf>