



Integration of the Whole Brain Learning Approach (WBLA) to the College of Teacher Education

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Abstract

This study examined the integration of the Whole Brain Learning Approach (WBLA) in the College of Teacher Education of President Ramon Magsaysay State University, Castillejos Campus, Zambales, Philippines. Anchored on Herrmann's Whole Brain Theory, the study analyzed how instructional delivery and learning experiences reflect internal, external, procedural, and interactive learning dimensions. An explanatory sequential mixed-methods design was employed. Quantitative data were gathered from 180 student-respondents selected from a population of 344 using Slovin's formula and from all 16 faculty members through total enumeration. A researcher-made questionnaire was used to assess instructional delivery, teacher strategies, student learning experiences, and WBLA implementation factors. Open-ended responses were analyzed thematically to explain and extend the survey results. Findings showed that student engagement, instructional strategies, and the use of brain-based principles were generally rated Excellent by faculty. Teachers reported consistent use of WBLA strategies, particularly in procedural, interactive, and internal learning, while students reported strong learning experiences across all four dimensions. However, differentiated instruction, data-informed teaching, technology integration, environmental enrichment, and wellness-oriented planning were less evident. Qualitative findings identified lack of teacher training, resistance to change, time constraints, limited resources, assessment misalignment, and classroom management concerns as major barriers. In response, the study proposed the WHOLISTIC Program, which emphasizes faculty development, lesson design support, institutional policy alignment, resource provision, monitoring, and research. The study concludes that WBLA can strengthen teacher education when implemented systematically, supported institutionally, and aligned with evidence-based instructional design.

Keywords: Whole Brain Learning Approach, brain-based learning, teacher education, internal learning, external learning, procedural learning, interactive learning, mixed methods



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INTRODUCTION

Teacher education programs are expected to prepare future teachers who can design inclusive, engaging, and cognitively responsive learning experiences. In higher education, this expectation has become more urgent because students differ not only in prior knowledge and academic readiness but also in motivation, learning preferences, social experiences, and access to learning resources. Contemporary learning science emphasizes that effective instruction should integrate cognition, emotion, social interaction, feedback, and meaningful practice rather than rely only on lecture-based

delivery (Darling-Hammond et al., 2020; Mayer, 2024). For colleges of teacher education, these principles are especially important because pre-service teachers must learn not only subject matter but also instructional habits that they will later transfer to their own classrooms. The Whole Brain Learning Approach (WBLA) offers a useful framework for organizing such instruction. Drawing from Herrmann's Whole Brain Theory, WBLA recognizes that learners benefit from varied opportunities for analytical, sequential, relational, and imaginative thinking (Herrmann, 1996). In this study, these orientations are operationalized through four learning dimensions: internal learning, which

emphasizes reflection, conceptual understanding, and metacognition; external learning, which emphasizes sensory, contextual, and environment-supported learning; procedural learning, which emphasizes structure, routines, accuracy, and mastery of processes; and interactive learning, which emphasizes dialogue, collaboration, and co-construction of knowledge. When these dimensions are intentionally balanced, WBLA can help teachers design learning experiences that go beyond content coverage and support critical, creative, reflective, and socially responsible learning.

Although brain-based and whole-brain approaches are increasingly discussed in education, their classroom-level application in Philippine teacher education remains underexplored. Many institutions continue to operate within assessment systems, classroom arrangements, and instructional routines that may limit flexible, multimodal, and learner-centered instruction. Philippine teacher education is also guided by outcomes-based expectations and professional standards that require teachers to demonstrate competence in content knowledge, pedagogy, learning environments, assessment, and professional growth (Commission on Higher Education [CHED], 2017; Department of Education [DepEd], 2017). These expectations make it timely to examine how WBLA is currently reflected in instructional delivery and what supports are needed for stronger implementation.

President Ramon Magsaysay State University (PRMSU), Castillejos Campus, Zambales, Philippines provides a relevant context for this inquiry. By examining the current instructional practices of its College of Teacher Education, the study can identify existing strengths, gaps, and institutional conditions that affect the integration of WBLA. The findings may help the college strengthen faculty development, curriculum alignment, learner engagement, and resource planning. More broadly, the study contributes to discussions on how neuroscience-informed and evidence-based pedagogy can be responsibly contextualized in

Philippine higher education without reducing learning to simplistic neuromyths or one-size-fits-all approaches.

Objectives of the Study. This study aimed to explore the integration of the Whole Brain Learning Approach in the College of Teacher Education at PRMSU, Castillejos Campus. Specifically, it sought to:

1. Describe the status of instructional delivery in terms of student engagement, instructional strategies, and the use of brain-based principles;
2. Determine the teacher strategies used to integrate WBLA in terms of internal, external, procedural, and interactive learning;
3. Assess students' learning experiences across the four WBLA dimensions;
4. Identify the facilitating and hindering factors that affect WBLA implementation; and
5. Propose an implementation plan that addresses the findings and supports sustainable WBLA integration in teacher education.

METHODOLOGY

Research Design. The study employed an explanatory sequential mixed-methods design. In this design, quantitative data are collected and analyzed first, followed by qualitative data that help explain, clarify, or deepen the quantitative findings (Creswell & Plano Clark, 2017). The quantitative phase described the status of instructional delivery, WBLA strategies, and students' learning experiences using survey ratings. The qualitative phase examined open-ended responses on factors that facilitated or hindered WBLA implementation. Integrating both phases allowed the study to move beyond numerical ratings and explain what the findings mean for actual instructional practice in the College of Teacher Education.

Locale and Participants. The study was conducted in the College of Teacher Education of President Ramon Magsaysay State University, Castillejos Campus, Zambales, Philippines. Participants were selected because they were directly involved in the teaching and learning environment being examined. The student population consisted of 344 students, from which 180 student-respondents were identified using Slovin's formula. Faculty participation used total enumeration because the number of faculty members was manageable; thus, all 16 faculty members were included. The study focused only on the Castillejos Campus; therefore, the findings should be interpreted as context-specific and should not be generalized automatically to other campuses or teacher education institutions without further validation.

Sampling Procedure. Purposive sampling was used to ensure that the participants had direct experience with the instructional practices under investigation. The 180 student-respondents represented the learner perspective on WBLA-related classroom experiences, while the 16 faculty members represented the instructional and implementation perspective. The combination of student and faculty data made it possible to compare reported teaching strategies with actual learning experiences.

Research Instrument. The research instrument consisted of a researcher-made questionnaire based on the constructs of WBLA and Herrmann's Whole Brain Theory, divided into three sections measuring instructional delivery, teacher strategies and student learning experiences, and perceived facilitators and barriers to WBLA implementation. Quantitative items employed a 4-point Likert scale, while qualitative items allowed participants to elaborate on their observations. The instrument underwent content validation, where experts assessed the clarity, relevance, and alignment of items with the four WBLA dimensions, and revisions were made to improve wording, remove ambiguity, and ensure alignment with study objectives.

Data-Gathering Procedure. After securing permission from the appropriate university authorities, the researcher administered the questionnaire to the identified faculty and student respondents. Participants were informed of the purpose of the study, the voluntary nature of participation, and the confidentiality of their responses. Quantitative responses were gathered using the Likert-scale items, while qualitative responses were obtained through open-ended prompts. Completed instruments were checked for completeness before encoding and analysis.

Data Analysis. Quantitative data were analyzed using frequency, percentage, rank, and weighted mean. The weighted means were interpreted using the scales indicated in the legends of the results tables. Qualitative responses were analyzed thematically following a systematic process of familiarization, coding, categorization, and theme development (Braun & Clarke, 2006). Significant statements were grouped into emergent themes such as training deficiency, resistance to change, time constraints, resource limitations, assessment misalignment, low motivation, conceptual uncertainty, and classroom management challenges. The qualitative themes were then used to explain and extend the quantitative findings.

Ethical Considerations. The study observed ethical principles of voluntary participation, informed consent, confidentiality, and responsible data handling. No personally identifying information was reported in the results. Responses were used only for research purposes and were presented in aggregate form.

RESULTS

This section presents the findings on the current status of instructional delivery, teacher strategies for WBLA integration, students' learning experiences, and factors affecting implementation. The interpretation emphasizes what the results imply for WBLA integration in

teacher education rather than merely restating the highest and lowest means.

Status of Instructional Delivery in terms of Student Engagement, Instructional Strategies, and the Use of Brain-Based Principles

Table 1
Current Status of the Delivery of Instruction of the College of Teacher Education in Terms of Student Engagement

| | Engagement of Students | Mean | Interpretation | Rank |
|----|---|------|----------------|------|
| 1 | Students demonstrate sustained attention and focus during instructional activities. | 3.43 | Excellent | 6 |
| 2 | Learners actively participate in class discussions and collaborative tasks. | 3.31 | Excellent | 8.5 |
| 3 | Students are encouraged to ask questions and share insights related to the lesson. | 3.62 | Excellent | 2 |
| 4 | Learning tasks are connected to students' interests and real-life experiences. | 3.56 | Excellent | 3 |
| 5 | Teachers use varied multimedia tools to capture students' attention. | 3.37 | Excellent | 7 |
| 6 | Students are given opportunities for choice and voice in their learning activities. | 3.68 | Excellent | 1 |
| 7 | Instructional pacing keeps students involved without overwhelming them. | 3.31 | Excellent | 8.5 |
| 8 | Feedback from students is regularly solicited to improve instructional delivery. | 3.50 | Excellent | 4 |
| 9 | Student motivation is nurtured through clear goal setting and progress tracking. | 3.31 | Excellent | 8.5 |
| 10 | Differentiated tasks are used to keep all students appropriately challenged. | 3.12 | Good | 10 |
| | Overall Weighted Mean | 3.43 | Excellent | |

Legend: 3.25 - 4.00 (Excellent); 2.50 - 3.24 (Good); 1.75 - 2.49 (Fair); 1.00 - 1.74 (Poor)

The results in Table 1 indicate that student engagement is already a visible strength of instructional delivery. The Excellent overall weighted mean suggests that faculty commonly create opportunities for learner voice, questioning, real-life connection, and feedback. However, the comparatively lower rating for differentiated tasks shows that engagement is not yet equally responsive to varied readiness levels, interests, and learning needs. For WBLA implementation, this means that the college has a strong learner-centered foundation but should strengthen differentiation so that internal, procedural, external, and interactive activities are accessible to diverse learners.

Table 2
Current Status of the Delivery of Instruction of the College of Teacher Education in Terms of Strategies Used by Teachers

| | Strategies Used by Teachers | Mean | Interpretation | Rank |
|----|---|------|----------------|------|
| 1 | Teachers plan lessons using backward design to align objectives with assessments. | 3.50 | Excellent | 1.5 |
| 2 | Varied instructional strategies (e.g., direct instruction, inquiry, cooperative learning) are used. | 3.18 | Good | 6.5 |
| 3 | Teachers employ formative assessments to guide instruction. | 3.37 | Excellent | 3.5 |
| 4 | Learning outcomes are explicitly stated and consistently reviewed with students. | 3.50 | Excellent | 1.5 |
| 5 | Instruction is scaffolded to support diverse learning needs. | 3.31 | Excellent | 5 |
| 6 | Teachers integrate cross-disciplinary approaches when appropriate. | 3.06 | Good | 8.5 |
| 7 | Teachers encourage metacognitive strategies like reflection and self-assessment. | 3.37 | Excellent | 3.5 |
| 8 | Differentiation is practiced meeting individual learner needs. | 3.18 | Good | 6.5 |
| 9 | Teachers use data to inform instruction and adjust teaching strategies. | 3.00 | Good | 10 |
| 10 | Active learning strategies, such as problem-solving and simulations, are frequently employed. | 3.06 | Good | 8.5 |
| | Overall Weighted Mean | 3.26 | Excellent | |

Legend: 3.25 - 4.00 (Excellent); 2.50 - 3.24 (Good); 1.75 - 2.49 (Fair); 1.00 - 1.74 (Poor)

In Table 2, instructional planning appears to be anchored on clear outcomes, backward design, formative assessment, and metacognitive reflection. These practices are consistent with WBLA because they provide direction and feedback for learning. However, lower ratings for data-informed instruction, cross-disciplinary integration, and active strategies such as simulations suggest that instruction may still rely more on planned delivery than on continuous adjustment to learner evidence. Strengthening the use of classroom data and active learning would help teachers make WBLA more responsive and experiential.

Table 3
Current Status of the Delivery of Instruction of the College of Teacher Education in Terms of Use of Principles on How the Brain Works

| | Use of Principles on How the Brain Works | Mean | Interpretation | Rank |
|----|--|------|----------------|------|
| 1 | Lessons are designed to connect new knowledge to prior learning experiences. | 3.37 | Excellent | 4.5 |
| 2 | Teachers incorporate multi-sensory activities to enhance memory retention. | 3.25 | Excellent | 7.5 |
| 3 | Emotional connections are established to support meaningful learning. | 3.50 | Excellent | 2.5 |
| 4 | Repetition and reinforcement are used to consolidate understanding. | 3.31 | Excellent | 6 |
| 5 | Instruction considers cognitive load to avoid overwhelming students. | 3.37 | Excellent | 4.5 |
| 6 | Brain breaks and movement activities are integrated into long instructional periods. | 3.50 | Excellent | 2.5 |
| 7 | Teachers foster a growth mindset to build students' resilience. | 3.56 | Excellent | 1 |
| 8 | Sleep, nutrition, and well-being factors are considered in planning learning activities. | 3.18 | Good | 10 |
| 9 | Teachers vary content delivery formats to cater to different learning styles. | 3.25 | Excellent | 7.5 |
| 10 | Novelty and surprise are used to activate attention and stimulate brain function. | 3.25 | Excellent | 7.5 |
| | Overall Weighted Mean | 3.36 | Excellent | |

Legend: 3.25 - 4.00 (Excellent); 2.50 - 3.24 (Good); 1.75 - 2.49 (Fair); 1.00 - 1.74 (Poor)

In Table 3, faculty ratings show that brain-based principles are integrated through growth mindset, emotional connection, movement breaks, reinforcement, and attention to cognitive load. These practices are important because learning is supported when students feel safe, motivated, and cognitively prepared. The lower rating for sleep, nutrition, and well-being factors indicates an opportunity to connect WBLA with holistic student support. In teacher education, this is significant because future teachers need to see wellness, motivation, and learning design as connected aspects of instructional planning.

Teacher Strategies For WBLA Integration

Table 4
Teacher Strategies for the Integration of the Whole Brain Learning Approach in Terms of Internal Learning

| | Internal Learning | Mean | Descriptive Rating | Rank |
|----|--|------|--------------------|------|
| 1 | Encourage students to engage in self-assessment to monitor their own learning progress. | 3.12 | Often | 10 |
| 2 | Use essential questions to stimulate deep thinking and conceptual understanding. | 3.31 | Always | 5.5 |
| 3 | Design learning tasks that require students to connect prior knowledge with new content. | 3.43 | Always | 3.5 |
| 4 | Reflection journals are integrated into lessons to help students internalize key concepts. | 3.25 | Always | 8 |
| 5 | Concept maps and graphic organizers are used to visualize relationships among ideas. | 3.43 | Always | 3.5 |
| 6 | Students are encouraged to set learning goals and reflect on their achievement. | 3.31 | Always | 5.5 |
| 7 | Instruction focuses on enduring understandings rather than isolated facts. | 3.50 | Always | 1.5 |
| 8 | Provide waiting time after questions to allow students to think deeply before responding. | 3.50 | Always | 1.5 |
| 9 | Students are guided to develop their own problem-solving strategies. | 3.25 | Always | 8 |
| 10 | Lessons include opportunities for students to transfer knowledge to real-life contexts. | 3.25 | Always | 8 |
| | Overall Weighted Mean | 3.34 | Always | |

Legend: 3.25 - 4.00 (Always); 2.50 - 3.24 (Often); 1.75 - 2.49 (Sometimes); 1.00 - 1.74 (Never)

Internal learning was rated Always (Table 4), showing that teachers regularly promote conceptual understanding, reflection, prior-knowledge activation, and transfer. This is a strong foundation for teacher education because pre-service teachers must learn how to connect theory with practice. The lower rating for self-assessment, however, suggests that students may need more structured opportunities to monitor their own progress and regulate learning independently.

Table 5
Teacher Strategies for the Integration of the Whole Brain Learning Approach in Terms of External Learning

| | External Learning | Mean | Descriptive Rating | Rank |
|----|--|------|--------------------|------|
| 1 | Design stimulates classroom environments that support sensory engagement. | 3.25 | Always | 5.5 |
| 2 | Visual aids, manipulatives, and multimedia tools are used to reinforce learning. | 3.25 | Always | 5.5 |
| 3 | Learning tasks incorporate real-world resources such as news articles and videos. | 3.37 | Always | 3 |
| 4 | Educational field trips are used to connect classroom learning with the outside world. | 3.00 | Often | 9 |
| 5 | Use anchor charts and wall displays to reinforce key concepts. | 3.12 | Often | 7.5 |
| 6 | Background music and ambient sound are selectively used to enhance concentration. | 2.87 | Often | 10 |
| 7 | Lessons include demonstrations and experiments to engage students physically. | 3.50 | Always | 1 |
| 8 | External cues like posters and symbols are used to prompt recall and understanding. | 3.31 | Always | 4 |
| 9 | Incorporate environmental print to foster language and literacy skills. | 3.18 | Often | 6 |
| 10 | Physical classroom arrangements are modified to support various learning styles. | 3.12 | Often | 7.5 |
| | Overall Weighted Mean | 3.20 | Often | |

Legend: 3.25 - 4.00 (Always); 2.50 - 3.24 (Often); 1.75 - 2.49 (Sometimes); 1.00 - 1.74 (Never)

In Table 5, External learning was rated Often, making it the least developed teacher-reported WBLA dimension. Demonstrations, real-world resources, visual aids, and sensory classroom supports are present, but field-based experiences, environmental cues, flexible arrangements, and ambient supports are less consistent. This implies that WBLA implementation is affected by classroom space, available materials, and institutional resources. Strengthening external learning would help make lessons more concrete, experiential, and connected to real teaching contexts.

Table 6
Teacher Strategies for the Integration of the Whole Brain Learning Approach in Terms of Procedural Learning

| | Procedural Learning | Mean | Descriptive Rating | Rank |
|----|--|------|--------------------|------|
| 1 | Provide explicit instruction on step-by-step procedures for tasks. | 3.31 | Always | 9 |
| 2 | Rubrics and checklists are used to clarify expectations and guide student work. | 3.43 | Always | 4.5 |
| 3 | Repetitive practice is employed to build automaticity in essential skills. | 3.31 | Always | 9 |
| 4 | Students are taught learning routines, such as how to annotate texts or conduct experiments. | 3.37 | Always | 7 |
| 5 | Modeling and guided practice are used before moving to independent work. | 3.43 | Always | 4.5 |
| 6 | Scaffolding techniques are applied to support skill development over time. | 3.43 | Always | 4.5 |
| 7 | Use formative assessments to monitor procedural accuracy. | 3.50 | Always | 1.5 |
| 8 | Lessons emphasize mastery of learning processes alongside content knowledge. | 3.50 | Always | 1.5 |
| 9 | Feedback is provided to help students refine their techniques and strategies. | 3.43 | Always | 4.5 |
| 10 | Daily routines and structured activities foster discipline and task completion. | 3.37 | Always | 7 |
| | Overall Weighted Mean | 3.41 | Always | |

Legend: 3.25 - 4.00 (Always); 2.50 - 3.24 (Often); 1.75 - 2.49 (Sometimes); 1.00 - 1.74 (Never)

Procedural learning obtained the highest teacher-reported overall mean (Table 6). This suggests that teachers emphasize rubrics, formative assessment, modeling, scaffolding, feedback, and mastery of learning processes. Such practices are valuable in teacher education because pre-service teachers need clear standards and repeated practice in lesson planning, classroom management, assessment, and teaching routines. The challenge is to keep procedural structure flexible enough to support creativity and learner agency rather than reduce WBLA to compliance with steps.

Table 7
Teacher Strategies for the Integration of the Whole Brain Learning Approach in Terms of Interactive Learning

| | Interactive Learning | Mean | Descriptive Rating | Rank |
|----|---|------|--------------------|------|
| 1 | Group projects and cooperative learning tasks are frequently implemented. | 3.43 | Always | 4 |
| 2 | Think-pair-share strategies are used to promote peer dialogue. | 3.50 | Always | 2.5 |
| 3 | Socratic seminars and academic discussions develop critical thinking and communication skills. | 3.56 | Always | 1 |
| 4 | Role-playing and simulations engage students in interactive problem-solving. | 3.25 | Always | 6.5 |
| 5 | Technology tools such as forums or breakout rooms support virtual collaboration. | 3.25 | Always | 6.5 |
| 6 | Peer teaching is encouraged to promote reciprocal learning. | 3.37 | Always | 5 |
| 7 | Use questioning strategies to provoke student dialogue and reflection. | 3.37 | Always | 5 |
| 8 | Classroom norms support respectful listening and the valuing of diverse perspectives. | 3.25 | Always | 6.5 |
| 9 | Students co-construct knowledge through inquiry-based learning experiences. | 3.50 | Always | 2.5 |
| 10 | Teachers facilitate learning through guided conversations rather than direct instruction alone. | 3.06 | Often | 10 |
| | Overall Weighted Mean | 3.36 | Always | |

Legend: 3.25 - 4.00 (Always); 2.50 - 3.24 (Often); 1.75 - 2.49 (Sometimes); 1.00 - 1.74 (Never)

Interactive learning was also rated Always, as shown in Table 7, indicating that faculty frequently use discussions, inquiry-based tasks, cooperative learning, peer dialogue, and respectful classroom norms. These strategies support the relational and communicative dimensions of teacher preparation. The relatively lower rating for guided conversations suggests that direct instruction may still dominate some lessons. Increasing facilitative questioning and dialogue-based instruction would deepen student participation and reflective thinking.

Students' Learning Experiences Across WBLA Dimensions

Table 8
Students' Learning Experiences in the College of Teacher Education in Terms of Internal Learning

| | Internal Learning | Mean | Descriptive Rating | Rank |
|----|---|------|--------------------|------|
| | My Instructors/ Professors... | | | |
| 1 | Encourage to engage in self-assessment to monitor their own learning progress. | 3.50 | Always | 6 |
| 2 | Use essential questions to stimulate deep thinking and conceptual understanding. | 3.55 | Always | 4 |
| 3 | Design learning tasks that require students to connect prior knowledge with new content. | 3.53 | Always | 5.5 |
| 4 | Integrate reflection journals into lessons to help internalize key concepts. | 3.38 | Always | 9 |
| 5 | Use concept maps and graphic organizers to visualize relationships among ideas. | 3.37 | Always | 10 |
| 6 | Encourage to set learning goals and reflect on achievement. | 3.53 | Always | 5.5 |
| 7 | Instruction focuses on enduring understandings rather than isolated facts. | 3.42 | Always | 8 |
| 8 | Provide waiting time after questions to allow students to think deeply before responding. | 3.57 | Always | 2 |
| 9 | Guide to develop problem-solving strategies. | 3.53 | Always | 5.5 |
| 10 | Include lesson opportunities to transfer knowledge to real-life contexts. | 3.70 | Always | 1 |
| | Overall Weighted Mean | 3.51 | Always | |

Legend: 3.25 - 4.00 (Always); 2.50 - 3.24 (Often); 1.75 - 2.49 (Sometimes); 1.00 - 1.74 (Never)

Students rated internal learning as Always, with strong emphasis on transferring knowledge to real-life contexts and having time to think before responding (Table 8). These findings suggest that students experience learning as meaningful and reflective rather than purely factual. The relatively lower rating for concept maps and graphic organizers indicates a need to diversify visual thinking tools that help students organize concepts, compare ideas, and synthesize learning.

Table 9
Students' Learning Experiences in the College of Teacher Education in Terms of External Learning

| | External Learning | Mean | Descriptive Rating | Rank |
|----|--|------|--------------------|------|
| | My Instructors/ Professors... | | | |
| 1 | Design stimulates classroom environments that support sensory engagement. | 3.38 | Always | 4 |
| 2 | Use visual aids, manipulatives, and multimedia tools to reinforce learning. | 3.62 | Always | 1 |
| 3 | Incorporate real-world resources such as news articles and videos. | 3.61 | Always | 2 |
| 4 | Educational field trips are used to connect classroom learning with the outside world. | 2.76 | Often | 10 |
| 5 | Use anchor charts and wall displays to reinforce key concepts. | 3.06 | Often | 9 |
| 6 | Use background music and ambient sound are selective to enhance concentration. | 2.88 | Often | 8 |
| 7 | Include demonstrations and experiments to engage students physically. | 3.37 | Always | 5 |
| 8 | Use external cues like posters and symbols to prompt recall and understanding. | 3.35 | Always | 6 |
| 9 | Incorporate environmental print to foster language and literacy skills. | 3.32 | Always | 7 |
| 10 | Modify physical classroom arrangements to support various learning styles. | 3.31 | Always | 8 |
| | Overall Weighted Mean | 3.27 | Always | |

Legend: 3.25 - 4.00 (Always); 2.50 - 3.24 (Often); 1.75 - 2.49 (Sometimes); 1.00 - 1.74 (Never)

In Table 9, students also rated external learning as Always, although field trips, wall displays, and ambient learning supports were less frequent. The high ratings for visual aids, multimedia, and real-world resources show that students perceive their classes as supported by concrete and contextual materials. This complements the teacher data but also confirms that resource-intensive external learning practices require stronger institutional support.

Table 10
Students' Learning Experiences in the College of Teacher Education in Terms of Procedural Learning

| | Procedural learning | Mean | Descriptive Rating | Rank |
|----|---|------|--------------------|------|
| | My Instructors/ Professors... | | | |
| 1 | Provide explicit instruction on step-by-step procedures for tasks. | 3.59 | Always | 2 |
| 2 | Use rubrics and checklists to clarify expectations and guide student work. | 3.75 | Always | 1 |
| 3 | Employ repetitive practice to build automaticity in essential skills. | 3.42 | Always | 9 |
| 4 | Taught learning routines, such as how to annotate texts or conduct experiments. | 3.34 | Always | 10 |
| 5 | Use modeling and guided practice before moving to independent work. | 3.55 | Always | 6 |
| 6 | Apply scaffolding techniques to support skill development over time. | 3.50 | Always | 8 |
| 7 | Use formative assessments to monitor procedural accuracy. | 3.54 | Always | 7 |
| 8 | Emphasize mastery of learning processes alongside content knowledge. | 3.56 | Always | 4.5 |
| 9 | Provide feedback to help students refine their techniques and strategies. | 3.58 | Always | 3 |
| 10 | Daily routines and structured activities foster discipline and task completion. | 3.56 | Always | 4.5 |
| | Overall Weighted Mean | 3.54 | Always | |

Legend: 3.25 - 4.00 (Always); 2.50 - 3.24 (Often); 1.75 - 2.49 (Sometimes); 1.00 - 1.74 (Never)

Procedural learning received a high student rating, especially in the use of rubrics, checklists, explicit instructions, feedback, and structured activities (Table 10). This finding suggests that students generally understand expectations and receive guidance on how to complete learning tasks. In teacher education, such clarity is important because it models assessment transparency and process-oriented teaching that students can later apply in their own classrooms.

Table 11
Students' Learning Experiences in the College of Teacher Education in Terms of Interactive Learning

| | Interactive learning | Mean | Descriptive Rating | Rank |
|----|--|------|--------------------|------|
| | My Instructors/ Professors... | | | |
| 1 | Implement frequently group projects and cooperative learning tasks. | 3.59 | Always | 4 |
| 2 | Use think-pair-share strategies to promote peer dialogue. | 3.47 | Always | 8 |
| 3 | Employ Socratic seminars and academic discussions to develop critical thinking and communication skills. | 3.41 | Always | 9 |
| 4 | Employ role-playing and simulations to engage students in interactive problem-solving. | 3.38 | Always | 10 |
| 5 | Use technology tools including communication platforms like Zoom and Google meet to support virtual collaboration. | 3.66 | Always | 2 |
| 6 | Encourage peer teaching to promote reciprocal learning. | 3.48 | Always | 7 |
| 7 | Use questioning strategies to provoke student dialogue and reflection. | 3.57 | Always | 6 |
| 8 | Encourage classroom norms to support respectful listening and the valuing of diverse perspectives. | 3.67 | Always | 1 |
| 9 | Co-construct knowledge through inquiry-based learning experiences. | 3.58 | Always | 5 |
| 10 | Facilitate learning through guided conversations rather than direct instruction alone. | 3.61 | Always | 3 |
| | Overall Weighted Mean | 3.54 | Always | |

Legend: 3.25 - 4.00 (Always); 2.50 - 3.24 (Often); 1.75 - 2.49 (Sometimes); 1.00 - 1.74 (Never)

Interactive learning was strongly experienced by students, particularly through respectful classroom norms, virtual collaboration tools, guided conversations, group projects, and inquiry-based learning (Table 11). These results show that students experience the classroom as a space for communication and collaboration. The lower rating for role-playing and simulations, however, suggests that interactive learning can be further strengthened through performance-based, classroom-scenario, and practice-teaching activities.

A comparison of teacher and student ratings shows that students generally reported stronger exposure to WBLA dimensions than teachers reported using them. For example, students rated internal learning at 3.51 compared with the teachers' 3.34, external learning at 3.27 compared with 3.20, procedural learning at 3.54 compared with 3.41, and interactive learning at 3.54 compared with 3.36. This convergence suggests that WBLA-related strategies are visible to learners, while the slight difference may indicate that students experience these practices more positively than teachers assess their own implementation. It may also reflect the need for common rubrics or observation tools so that faculty and

students share a clearer understanding of what counts as systematic WBLA practice.

Factors Affecting WBLA Implementation

Table 12
Factors Affecting the Implementation of the Whole Brain Learning Approach at President Ramon Magsaysay State University as Reported by Faculty and Students

| Emergent Theme | Code | Categorized Significant Statements | | |
|--|----------------------------|--|--|---|
| Lack of Teacher Training and Familiarity | Training Deficiency | "Many instructors are unfamiliar with Whole Brain Learning strategies due to a lack of specialized training." "Educators need proper training to effectively utilize all the strategies involved." "Most instructors lack formal training on the principles and techniques of Whole Brain Learning." "Teachers may not have the necessary training or support." "Limited seminars and workshops offered in teacher education institutions." "Without the right training or support, teachers may feel unsure or uncomfortable using this new approach." "Some educators may resist shifting away from familiar teaching practices." "Teachers still follow traditional lecture-based methods." | | |
| | | Resistance to Change | Conservatism in Pedagogy | "Traditional systems, standardized testing, and rigid curricula dominate." "Educators hesitate to use modern ways of teaching and assessing students." "Lecture-based teaching persists despite innovative alternatives." "Whole Brain Learning requires more preparation, creativity, and materials." "Takes more time and energy to prepare." "Teachers already have many other tasks and roles." "With rigid schedules and a full curriculum, teachers may feel pressured to rush lessons." "Planning and executing WBL-based lessons typically require more time." |
| Time and Effort Constraints | Time Limitations | "Many schools don't have enough resources like projectors, visual aids, and tools." "Limited facilities and digital tools." "Classroom constraints hinder movement-based and group activities." "Some schools lack materials, equipment, or space for interactive learning." "Not all schools can provide visual aids like charts or mockups." "Standardized tests focus on memorization and logical reasoning, not holistic thinking." "The emphasis on paper-based exams contradicts WBL's performance-based assessments." "Assessment difficulties - traditional tools don't support WBL outcomes." "Prescribed syllabi leave little room for flexible, student-centered learning." "The laziness of individuals restrains brain learning." "If the teacher is unmotivated, students may not build rapport." "Some students are not used to interactive or creative learning." "Lack of engagement from both teachers and students affects implementation." | | |
| | | Limited Resources and Infrastructure | Resource Limitations | "Whole brain learning is hard to use in schools because there isn't much proof it really works." "Some schools are slow to accept new methods." "The approach is often misunderstood or seen as just a trend." "Lack of awareness and understanding among educators and institutions." "Managing a large number of students makes it difficult to apply WBL strategies." "Requires an environment that is high in challenges." "Large class sizes and strict lesson plans hinder creativity." "Difficult to individualize instruction under current classroom setups." |
| Curriculum and Assessment Misalignment | Assessment Incompatibility | | | |
| | | Motivational and Systemic Challenges | Low Teacher Motivation, Institutional Support Deficiency | "Lack of empirical support and misunderstanding" |
| Lack of Empirical Support and Misunderstanding | Conceptual Uncertainty | | | |
| | | Classroom Management Challenges | Management Complexity | |

The qualitative findings in Table 12 show that WBLA implementation is shaped by interrelated instructional, institutional, and motivational factors. Lack of teacher training emerged as a central barrier because teachers cannot confidently apply a whole-brain approach

without sufficient conceptual understanding and practical models. Resistance to change and continued reliance on traditional lecture-based delivery further limit experimentation. Time constraints, heavy workloads, limited resources, and rigid assessment practices make it difficult for faculty to design differentiated, multimodal, and performance-based learning experiences. These barriers show that WBLA cannot be sustained by individual teacher effort alone; it requires coordinated faculty development, curricular support, resource allocation, and institutional monitoring.

Proposed Implementation Plan

Table 13
Proposed Implementation Plan for the Whole Brain Learning Approach Titled "WHOLISTIC" in the College of Teacher Education, PRMSU

| Component | Objectives | Key Activities | Responsible Units | Timeframe | Expected Outcomes |
|---|---|---|--|--|---|
| W - Workshops for Teacher Training | Improve teacher knowledge and skills in Whole Brain Learning strategies | - Conduct training workshops - Facilitate peer mentoring - Invite WBL experts for webinars - Develop WBL-aligned lesson plans | College of Education Faculty Development Center | Q1 - Q2 of Year 1; Ongoing refreshers annually | Increased teacher competency in using WBL |
| H - Hands-on Learning Integration | Incorporate practical application of WBL into daily instruction | - Conduct demo teaching sessions - Observe and coach faculty on active learning | Department Chairs Instructional Coaches | Q2 - Q4 of Year 1 | WBL strategies applied in regular teaching practice |
| O - Organizational Support | Institutionalize WBL as a strategic priority | - Include WBL in strategic plans - Appoint WBL coordinators - Develop policy on WBL use - Produce videos, visual aids, games | University Admin Curriculum Committee | Q1 of Year 1 | Formal recognition and support of WBL implementation |
| L - Learning Materials Development | Provide WBL-aligned instructional tools and aids | - Develop repositories of contextualized content - Train teachers to create WBL materials - Acquire interactive tools (e.g., projectors, tablets) | ICT Department Instructional Designers | Q2 - Q3 of Year 1 | Availability of diverse WBL teaching materials |
| I - Infrastructure Enhancement | Upgrade facilities to enable multimodal learning | - Modify classrooms for active group learning - Improve internet connectivity - Implement differentiated instruction | Property & Supplies Facilities Management Office | Q3 - Q4 of Year 1 | Improved classroom environment for WBL |
| S - Student-Centered Strategies | Address diverse learning needs and styles | - Use student learning profiles - Encourage student feedback and co-design - Provide co-teaching/team-teaching options | Faculty Guidance Counselors | Q2 - Year 2; Ongoing | Higher student engagement and inclusivity |
| T - Time Management Support | Address teacher workload and lesson preparation time | - Adjust schedules to allow planning time - Create WBL lesson templates - Set WBL implementation metrics | Academic Affairs Department Heads | Q1 - Q2 of Year 2 | More manageable teaching schedules; reduced teacher burnout |
| I - Institutional Monitoring and Evaluation | Ensure accountability and continuous improvement | - Conduct classroom observations - Use surveys and feedback forms - Conduct action research | Research Office QA Office Deans | Q3 of Year 1; Biannual | Evidence of program effectiveness; continuous refinement |
| C - Continuous Research and Development | Promote scholarly inquiry into WBL practices | - Document case studies - Present findings in conferences | Faculty Researchers Graduate Programs | Year 2 onward | Ongoing innovation and contribution to WBL knowledge base |

As shown in Table 13, the proposed WHOLISTIC Program responds directly to the barriers identified in the qualitative findings. Workshops address training deficiency; hands-on learning integration responds to the need for practical application; organizational support and monitoring address sustainability; learning materials and infrastructure enhancement respond to resource limitations; student-centered strategies address diverse learner

needs; time management support responds to workload concerns; and continuous research addresses the need for local evidence. To be more actionable, the program should be implemented in phases, beginning with faculty readiness and lesson design support, followed by resource development, classroom application, monitoring, and research dissemination.

DISCUSSION

The findings show that the College of Teacher Education already practices several elements associated with WBLA, although these appear to be more implicit than systematically institutionalized. The high ratings in engagement, instructional strategies, brain-based principles, procedural learning, and interactive learning indicate that teachers already use strategies that support learner autonomy, reflection, feedback, collaboration, and real-life application. From the perspective of Herrmann's Whole Brain Theory, the results suggest uneven but promising development across the four learning dimensions. Internal learning is supported through reflection, essential questions, conceptual understanding, and knowledge transfer, while external learning remains the least developed dimension because it requires concrete materials, sensory supports, flexible spaces, technology, and real-world resources. Procedural learning emerged as a major strength through rubrics, checklists, modeling, scaffolding, formative assessment, and feedback, which supports the view that clear expectations and guided feedback improve learning (Hattie & Timperley, 2007) and help manage task complexity (Sweller et al., 2019). Interactive learning also appears strong, as teachers and students reported the use of discussions, cooperative learning, peer teaching, virtual collaboration tools, and respectful classroom norms, consistent with active learning literature (Freeman et al., 2014; Prince, 2004). However, weaker areas such as differentiation, data-driven instruction, technology integration, environmental enrichment, wellness planning, resource-intensive activities, role-playing, and

simulations show that WBLA integration must become more deliberate, balanced, and institutionally supported.

The student data strengthens the interpretation because learners consistently affirmed the presence of WBLA-related strategies and rated all four learning dimensions as Always, with ratings slightly higher than those of teachers. This suggests that students experience the classroom environment as engaging, structured, and interactive. However, the findings should be interpreted within the methodological limitations of the study. Since the data relied mainly on self-report responses from teachers and students, the results may reflect perceptions rather than direct evidence of actual classroom practices or measurable learning outcomes. The sample size, institutional context, and specific scope of the study also limit the generalizability of the findings to other teacher education institutions. Future studies may strengthen the evidence by including classroom observations, student performance data, lesson artifact analysis, interviews, and longitudinal tracking to determine whether WBLA implementation produces sustained improvement in teacher education competencies over time. These limitations do not weaken the value of the findings, but they clarify the boundaries within which the results should be understood.

The qualitative barriers provide the most direct guidance for program improvement. Lack of training, resistance to change, time constraints, resource limitations, curriculum-assessment misalignment, low motivation, and classroom management difficulties show that WBLA is an institutional change process rather than a simple teaching technique. Faculty development must therefore include conceptual grounding, practical design support, sample lesson plans, assessment rubrics, coaching, peer observation, and sufficient time to redesign instruction. Administrators also need to align curriculum, resources, monitoring systems, and professional development so that teachers are not expected to implement WBLA without structural support. Brain-based education

should remain evidence informed and avoid oversimplified claims about left-brain and right-brain dominance; Herrmann's model is useful when applied as a pedagogical planning framework rather than as a fixed neurological classification of learners. This study contributes to teacher education research by providing localized evidence on how WBLA-related practices are experienced by both teachers and students, while also identifying the institutional conditions needed for successful implementation. Its policy significance lies in showing that teacher education programs should embed WBLA principles into curriculum planning, faculty development, instructional supervision, resource allocation, and quality assurance systems. Overall, the findings support the proposed WHOLISTIC Program as a coherent institutional response that can strengthen teacher education outcomes at PRMSU when implemented with training, resources, monitoring, and continuous action research.

Conclusions. The College of Teacher Education demonstrates strong instructional delivery, evident in its emphasis on student engagement, lesson planning, assessment, emotional support, and brain-based teaching. Within this environment, Whole Brain Learning Approach (WBLA) is already embedded in practice, particularly through procedural and interactive strategies that foster active participation. Students themselves view WBLA positively, recognizing its presence in real-life tasks, clear instructional guidance, respectful teacher-student interactions, and collaborative group learning. These experiences highlight the potential of WBLA to enrich classroom dynamics and make learning more meaningful and responsive to diverse student needs.

Despite these strengths, challenges remain in fully realizing WBLA's promise. Teachers face constraints such as limited training, inadequate resources, heavy workloads, resistance to change, weak alignment with assessment, low motivation, and classroom management difficulties. Addressing these issues requires

systemic support, and the WHOLISTIC Program emerges as a suitable response.

Recommendations. In light of the findings, the following recommendations are proposed to enhance the integration of the Whole Brain Learning Approach (WBLA) and strengthen the WHOLISTIC Program within teacher education practice.

1. Provide faculty orientation and capacity-building activities on the WHOLISTIC Program and WBLA. Institutions may begin implementation through faculty orientation sessions and lesson design workshops that introduce the principles, instructional applications, and classroom relevance of WBLA.
2. Strengthen faculty professional development on learner-centered and brain-based teaching practices. Regular training may be conducted on differentiated instruction, data-driven teaching, multimedia-assisted learning, formative assessment, performance-based assessment, and facilitation of interactive learning experiences.
3. Align curriculum and assessment practices with WBLA principles. Curriculum planners and academic leaders may integrate authentic tasks, simulations, reflective outputs, collaborative projects, teaching demonstrations, and formative feedback mechanisms to ensure coherence between instruction, assessment, and expected learning outcomes.
4. Institutionalize a monitoring and evaluation mechanism for WBLA implementation. Schools may establish a systematic evaluation process that includes classroom observations, faculty self-assessment, student feedback, and evidence of learner performance to assess the effectiveness and sustainability of WBLA-based practices.
5. Promote faculty-led action research and cross-campus studies on WBLA. Higher

education institutions may encourage scholarly inquiry on the long-term effects of WBLA on pre-service teachers' competencies, engagement, academic performance, and readiness for professional practice. Such research may contribute to evidence-based curriculum improvement and broader institutional adoption of the WHOLISTIC Program.

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