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Guidelines for Management of a Spatial Education Management Program to Enhance Employability Skills of Students at Banhuaysai School

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Abstract

This research aimed to: 1) study approaches for driving spatial education management programs, 2) examine teacher learning management competencies, and 3) evaluate the effectiveness of spatial education management program implementation. A quasi-experimental research design with one-group posttest-only was employed from November 2024 to August 2025. The sample included 41 lower secondary school students and 5 teachers. Results revealed that: 1) The GREEN SCHOOL FOR STUDENTS program showed 87.5% appropriateness (excellent level), 2) Students achieved 81.64% in employability skills assessment (excellent level), 3) Students expressed high satisfaction with the program (mean = 4.01). The findings demonstrate that the spatial education management program effectively enhances students' employability skills.

Keywords: Employability, Program, Spatial Education, 21st Century Skills, Local Development

1. Introduction

Developing 21st-century employability skills is critical for aligning education with global directions and national policies. In Thailand, the National Education Act B.E. 2542 (1999) and the 20-Year National Strategy (2018-2037) emphasize developing learners' future competencies, particularly employability skills comprising soft skills, technical skills, and personal attributes required by domestic and international labor markets. International literature identifies key employability skills including leadership and teamwork, problem-solving and adaptability, technological proficiency, empathy and social awareness, and language competency (Bytyqi, 2021; Kong, 2021; Wardana et al., 2020). However, significant gaps persist between students' current skills and labor market demands.

This gap is evident at Banhuaysai School, Loei Province, where students lack access to programs emphasizing practical work skills, resulting in inadequate labor market preparation. This extends beyond employment scarcity to encompass deficiencies in essential skills for career creation and income stability, directly impacting quality of life and local economic development.

This research presents spatial education management guidelines to enhance students' employability skills through proven learning approaches: project-based learning (Bytyqi, 2021), experiential learning (Kong, 2021), internships (Indeed Editorial Team, 2023), vocational-technical education (Hummel, 2023), entrepreneurship education (Wardana et al., 2020), mentoring programs (Dennison, 2023), digital skills training (Jackman, 2021), social service (Sandaran, 2012), competency-based education (Oroszi, 2020), and industry partnerships (Awasthy et al., 2020).

The program employs Participatory Management concepts to align with local contexts and effectively address student and community needs, consistent with educational management theory emphasizing multi-sectoral participation (Awasthy et al., 2020). Successfully addressing these gaps will significantly enhance students' competitive capabilities and labor market readiness, positively impacting both individual quality of life and regional economic development.

2. Method

2.1 Participants

This research study involved 4 groups of participants:

2.1.1 Group 1: Stakeholders (N=16)

Including educational supervisors, school administrators, teachers, and community representatives selected through purposive sampling for workshops developing the school's educational program.

2.1.2 Group 2: Experts (N=3)

Including academics, educational management specialists, and policy-level administrators selected through purposive sampling to verify the school's educational program.

2.1.3 Group 3: Lower secondary students (N=41)

Students in Grades 7-9 in academic year 2025 selected through purposive sampling. The demographic breakdown showed 23 male students (56.1%) and 18 female students (43.9%), distributed across:

- Grade 7: 15 students (36.6%)
- Grade 8: 13 students (31.7%)
- Grade 9: 13 students (31.7%)

2.1.4 Group 4: Teachers (N=5)

Teachers at Banhuaysai School selected through purposive sampling to assess learning management competencies.

2.2 Measures

Five research instruments were developed and validated:

2.2.1 Educational Program Design Recording Form

Open-ended questions used in workshop processes to draft the school's educational program. The tool was created by studying research documents related to Design Thinking processes.

2.2.2 Educational Program Verification Form

Checklist for verifying the program draft before implementation, developed by studying research documents related to program evaluation.

2.2.3 Student Employability Skills Assessment Form

Rubrics with 4 quality levels assessing 7 dimensions of employability skills:

- 4 points = Excellent
- 3 points = Good
- 2 points = Fair
- 1 point = Needs Improvement

The assessment covered: Leadership & Teamwork, Problem-Solving and Adaptability Skills, Technological Skill, Tourism Interest, Empathy & Social Awareness, Health and Well-being Interest, and Language Proficiency.

2.2.4 Satisfaction Questionnaire

5-point Likert scale with 20 items assessing student satisfaction with the educational program:

- 5 = Highest satisfaction
- 4 = High satisfaction
- 3 = Moderate satisfaction
- 2 = Low satisfaction
- 1 = Lowest satisfaction

2.2.5 Teacher Learning Management Competency Assessment Form

5-point rating scale with 10 indicators assessing competencies through the spatial education program, with interpretations:

- 4.51-5.00: Excellent
- 3.51-4.50: Good
- 2.51-3.50: Moderate
- 1.51-2.50: Low
- 1.00-1.50: Lowest

2.3 Procedure and design

This research was conducted from November 2024 to August 2025 in three phases:

Phase 1: Study of implementation approaches for the area-based education management program to enhance essential employability skills for lower secondary school students at Banhuaysai School.

Phase 2: Study of teachers' competency in learning management through the area-based education management program.

Phase 3: Study of the results of implementing the area-based education management program.

This research employs project-based learning (Bytyqi, 2021), experiential learning (Kong, 2021), internships (Indeed Editorial Team, 2023), vocational and technical education (Hummel, 2023), entrepreneurship education (Wardana et al., 2020), mentoring programs (Dennison, 2023), digital skills training (Jackman, 2021), social service (Sandaran, 2012), competency-based education (Oroszi, 2020), and industry partnerships (Awasthy et al., 2020) as the framework for managing spatial education programs to enhance essential employability skills of lower secondary students at Banhuaysai School.

Measuring students' essential employability skills synthesized from concepts regarding employability in both international and Thai contexts reveals that employability comprises three dimensions: soft skills, technical skills, and personal attributes. When considering employability components from international literature reviews, frequently identified components with high frequency include:

1. Leadership & Teamwork
2. Problem-Solving and Adaptability Skills
3. Technological Skill

4. Tourism Interest
5. Empathy & Social Awareness
6. Health and Well-being Interest
7. Language Proficiency (Carpenter et al., 2024; Prabowo et al., 2023; Long & Nga, 2022; Guàrdia et al., 2021; Williams et al., 2015; Husain et al., 2014)

The management approach for spatial education programs to enhance essential employability skills can be specified in the research framework shown in Figure 1.

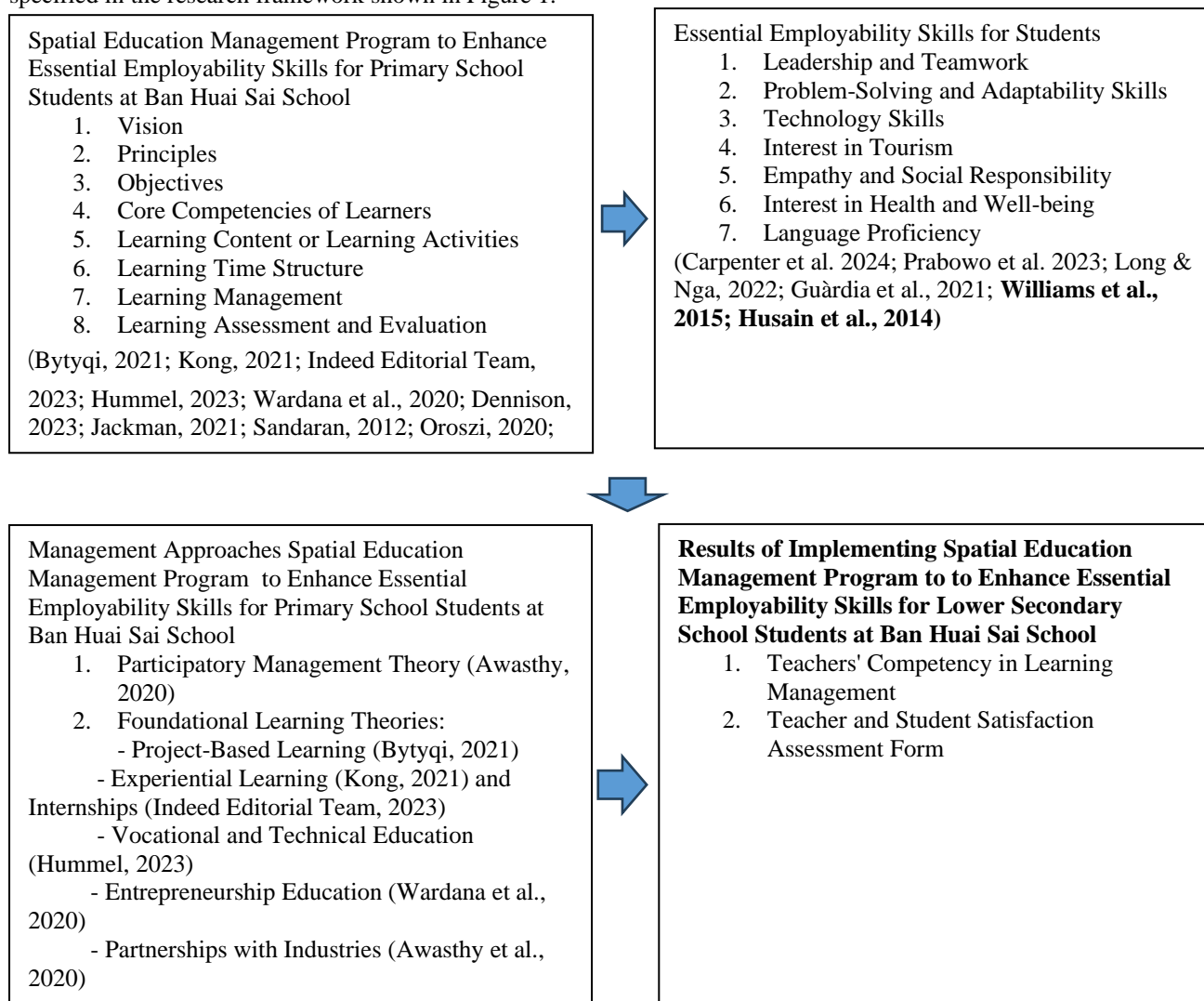


Figure 1 Research Conceptual Framework

2.3 Data Collection

1) Research Project Understanding Meeting

The researcher attended a meeting with the Loei Provincial Education Office to establish shared understanding of the research project's objectives and processes.

2) Research Project Proposal and Approval

The school administrator presented the research project to the teacher committee meeting, explaining details and objectives to obtain approval and acknowledgment.

3) Preparation with Supervising Agency

The researcher and administrator attended a meeting with the Loei Provincial Education Office to prepare for developing an area-based educational program.

4) School Context Analysis

Administrators, teachers, and students collaboratively analyzed the school's basic data, including vocational skills necessary for student employment.

5) Stakeholders Workshop

The school organized a workshop to draft the area-based educational program with participants including: 1

administrator, 8 teachers, 2 parent representatives, 2 school committee members, 1 sub-district administrative organization representative, 1 local community representative, and 1 educational supervisor.

6) Program Implementation Supervision

Researchers from the Loei Provincial Education Office conducted on-site supervision of the area-based educational program implementation at Banhuaysai School.

7) Evaluation

Assessment of the approach for implementing the area-based management program to enhance employability skills and evaluation of teacher competency in learning management.

8) Research Dissemination

The school presented and disseminated the GREEN SCHOOL FOR STUDENTS program development results at the provincial-level knowledge exchange forum.

2.4 Data analysis

Data were analyzed using the following methods:

2.4.1 Basic student data from employability skills assessment and satisfaction was analyzed using descriptive statistics including Frequency and Percentage.

2.4.2 Scores from student employability skills assessment were analyzed using Percentage, then compared against quality criteria at the "Good" level using the following interpretation criteria:

- 80-100%: Excellent level employability skills
- 70-79%: Good level employability skills
- 60-69%: Acceptable level employability skills
- Below 60%: Needs improvement level employability skills

2.4.3 Student satisfaction scores were analyzed using Mean and Standard Deviation with the following interpretation criteria:

- 4.51-5.00: Very high satisfaction level
- 3.51-4.50: High satisfaction level
- 2.51-3.50: Moderate satisfaction level
- 1.51-2.50: Low satisfaction level
- 1.00-1.50: Very low satisfaction level

2.4.4 Teacher learning management competency scores assessed through the area-based management program were analyzed using Mean and Standard Deviation with levels defined as:

- 4.51-5.00: Very good
- 3.51-4.50: Good
- 2.51-3.50: Moderate
- 1.51-2.50: Low
- 1.00-1.50: Very low

3. Results

The research findings are presented according to three research objectives: 1) the approach for implementing the area-based management program, 2) teacher learning management competency, and 3) results of implementing the spatial program management approach. The research findings are presented criteria.

Table 1: Expert Verification Results of School Educational Program

Assessment Criteria Components	Expert Verification Results			Conclusion and Recommendations
	1	2	3	
. Vision				
1.1 Reflects the goals of area-based education management to promote employability skills in the context of Loei Province	✓	✓	✓	<input checked="" type="checkbox"/> consistent
1.2 Aligns with the National Strategy, National Economic and Social Development Plan, National Education Plan, and labor market demands	✓	✓	✓	<input checked="" type="checkbox"/> consistent
1.3 Emphasizes developing learners to possess essential competencies for the future	✓	✓	✓	<input checked="" type="checkbox"/> consistent
2. Principles				
2.1 Explains educational management principles that are learner-centered and emphasize collaboration from local partners	✓	✓	✓	<input checked="" type="checkbox"/> consistent
2.2 Aligns with the concepts of Active Learning, Integrated Learning, and Experiential Learning	✓	✓	✓	<input checked="" type="checkbox"/> consistent

2.3 Takes into account learner diversity and equal access to opportunities	✓	✓	✓	☑ consistent
3. Objectives				
3.1 Clearly specifies the desired learning outcomes	✓	✓	✓	☑ consistent
3.2 Emphasizes measurable outcomes in terms of knowledge, skills, and attitudes	✓	✓	✓	☑ consistent
3.3 Reflects learners' readiness for the future world of work	✓	✓	✓	☑ consistent
4. Essential Competencies of Learners				
4.1 Consistent with 21st century skills	✓	✓	✓	☑ consistent
4.2 Focuses on life and career skills, such as self-management, digital literacy, and entrepreneurship skills	✓	✓	✓	☑ consistent
4.3 Connects to core competencies based on the Core Curriculum and location-specific competencies (health and wellness tourism)	✓	✓	✓	☑ consistent
5. Learning Content				
5.1 Features content designed to integrate general knowledge with vocational knowledge and community context	✓	✓	✓	☑ consistent
5.2 Comprehensive and appropriate for developing learners to possess the 7 essential employability skills	✓	✓	✓	☑ consistent
5.3 Flexible, allowing schools to adapt according to local context	✓	✓	✓	☑ consistent
6. Learning Time Structure				
6.1 Clearly defines time allocation for vocational skills learning or experiential training	✓	✓	✓	☑ consistent
6.2 Maintains balance between classroom learning and learning outside the classroom, such as community-based internships	✓	✓	✓	☑ consistent
6.3 Facilitates learning activities and is practically implementable	✓	✓	✓	☑ consistent
7. Learning Methods				
7.1 Utilizes varied learning methods, such as projects, authentic fieldwork, learning from business establishments, etc.	✓	✓	✓	☑ consistent
7.2 Encourages learner engagement through questioning, research, experimentation, and demonstration	✓	✓	✓	☑ consistent
7.3 Enhances learners' acquisition of all 7 dimensions of necessary employment skills	✓	✓	✓	☑ consistent
8. Learning Assessment and Evaluation				
8.1 Employs diverse assessment tools and methods, such as practical training outputs, assessment by instructors, learners, etc.	-	-	-	☑ inconsistent
8.2 Comprehensively measures knowledge, skills, and characteristics through clear criteria	-	-	-	☑ inconsistent
8.3 Emphasizes assessment for continuous learner development (formative assessment) rather than summative judgment	-	-	-	☑ inconsistent

According to Table 1, the expert verification results of the school's educational program showed that the area-based educational management program to strengthen students' necessary employability skills through

GREEN SCHOOL FOR STUDENTS activities at the lower secondary level of Ban Huai Sai School demonstrated program alignment at 87.5 percent.

2. Results of Teacher Competency Assessment in Teaching and Learning Management of the Area-Based Education Management Program to Enhance Essential Employability Skills for Lower Secondary School Students at Ban Huai Sai School

2.1 Student Demographics

The sample group of students used in the study to develop the Area-Based Education Management Program to enhance essential employability skills for lower secondary school students at Ban Huai Sai School consisted of 41 lower secondary school students selected through purposive sampling.

Item	Number	Percentage
1. Sex		100.00
1.1 Male	23	56.10
1.2 Female	18	43.90
1.3 Not specified	-	-
2. Grade Level		100.00
2.1 Grade 7	12	29.27
2.2 Grade 8	12	29.27
2.3 Grade 9	17	41.46

According to Table 2, the basic demographic data of students participating in the project shows that there were 23 male students, accounting for 56.1 percent, and 18 female students, accounting for 43.9 percent. The distribution by grade level consisted of 12 Grade 7 students (29.27 percent), 12 Grade 8 students (29.27 percent), and 17 Grade 9 students (41.46 percent).

2.2 Teacher Competency in Learning Management

Teachers completed the Area-Based Education Management Program to enhance essential employability skills for lower secondary school students. There were 10 indicators in total, with 5 teachers from Ban Huai Sai School participating.

Table 3: Teacher Competency Assessment in Learning Management and Satisfaction towards the Use of Area-Based Education Management Program to Enhance Students' Essential Employability Skills (N=5)

	indicators	Means	Interpret
1	Curriculum analysis with local area integration	4.16	Good
2	Determine learning objectives	4.12	Good
3	Select appropriate media and learning resources	4.00	Good
4	Implement varied teaching methodologies	4.10	Good
5	Conduct place-based learning activities	4.08	Good
6	Enhance vocational/workplace skills	4.04	Good
7	Employ multiple assessment instruments	4.00	Good
8	Evaluate employment readiness skills	3.94	Good
9	Deliver constructive feedback	4.10	Good
10	Totals	4.06	Good

According to Table 3, the results of the teacher competency assessment in learning management regarding the use of the Area-Based Education Management Program to enhance students' essential employability skills were overall at a good level (Mean = 4.06). This reflects that teachers were able to appropriately adapt the curriculum and instruction to connect with the actual local context and respond to learners' needs.

3. Results of Implementing the Spatial Program Management Approach

3.1 Essential Employability Skills of Lower Secondary School Students at Ban Huai Sai School

The Area-Based Education Management Program to enhance essential employability skills for lower secondary school students at Ban Huai Sai School aims to develop students' competencies and characteristics in 7 areas: leadership and teamwork, problem-solving and adaptability skills, technological competency, tourism knowledge, health and wellness knowledge, empathy and social responsibility, and language proficiency.

Table 4: Percentage Scores of Essential Employability Skills of Lower Secondary School Students at Ban Huai Sai School Compared to the Good Level Criterion (70% and above)

Grade Level	Percentage Score	Interpretation
Grade 7 (N=12)	83.11%	Excellent
Grade 8 (N=12)	79.39%	Good
Grade 9 (N=17)	82.41%	Excellent
Overall Average	81.64%	Excellent

According to Table 4, which presents the percentage scores of essential employability skills of lower secondary school students at Ban Huai Sai School compared to the good level criterion (70% and above), it was found that lower secondary students at Ban Huai Sai School achieved an essential employability skills score of 81.64 percent, which is at an excellent level and exceeds the established criterion.

2.5 Student Satisfaction with the Spatial Education Management Program to Enhance Essential Employability Skills of Lower Secondary School Students at Ban Huai Sai School

This measures the level of student satisfaction with the Spatial Education Management Program for enhancing essential employability skills in order to improve and develop the program to be more effective and aligned with students' needs.

Table 5: Student Satisfaction with the Area-Based Education Management Program to Enhance Essential Employability Skills (N=41)

Items	Mean	S.D.	Interpret
Dimension 1: Learning Content and Activities			
1.Clarity and ease of understanding of program content	3.91	0.68	High
2.Appropriateness of content for students' grade level	4.19	0.77	High
3.Variety of learning activities	4.16	0.71	High
4.Interest and attractiveness of activities	3.70	0.68	High
5.Appropriateness of hands-on practical activities	4.24	1.03	High
6.Fun and engagement stimulation in activities	4	0.98	High
7.Alignment of content with essential future career skills	4.15	0.86	High
Dimension 2: Learning Outcomes			
8.Development of teamwork and leadership skills	3.97	0.64	High
9.Development of problem-solving and adaptability skills	4.15	0.71	High
10.Development of technology skills	3.67	0.89	High
11.Increased knowledge and interest in tourism and local culture	3.87	0.79	High
12.Development of caring and helping others	4	0.61	High
13.Increased awareness and self-care of one's health	4.12	0.70	High
14.Development of foreign language communication skills	3.96	0.98	High
15.Ability to apply knowledge and skills from the program to real life	3.97	0.85	High
Dimension 3: Teachers' Learning Management			
16.Clarity in explaining content and activity procedures	4.24	0.71	High
17.Appropriateness of using media and teaching materials	4.06	0.78	High
18.Teachers' guidance and assistance during learning	4.03	0.64	High
19.Promotion of inclusive student participation	3.82	0.64	High
20.Inspiration and continuous learning motivation for students	3.88	0.74	High

From Table 5, satisfaction with the use of the Spatial education management program to enhance students' employability skills, it was found that students had a high level of satisfaction with the area-based education management program through GREEN SCHOOL FOR STUDENTS activities, with a mean score of 4.01

4. Discussion and conclusion

4.1 Summary of Research Results

The research findings can be summarized as follows:

4.1.1 The GREEN SCHOOL FOR STUDENTS program, designed using Participatory Management and Design Thinking (Empathize–Define–Ideate–Prototype–Test), successfully connected school-community contexts and employment skill requirements. Expert verification showed 87.5% appropriateness (very good level), though assessment methods need further development.

4.1.2 Teachers' (N=5) overall learning management competency reached Good level (Mean = 4.06), excelling in curriculum analysis linking local areas (4.16), objective design (4.12), diverse teaching methods (4.10), and providing feedback (4.10). This demonstrates effective capacity building through participatory processes.

4.1.3 Lower secondary students at Banhuaysai School achieved 81.64% in employability skills (Excellent level), exceeding the established criteria. Students expressed high satisfaction with the GREEN SCHOOL FOR STUDENTS program (Mean = 4.01), reflecting genuine learning needs fulfillment.

4.2 Discussion

4.2.1 Program Appropriateness

The 87.5% appropriateness rating reflects the effectiveness of using Design Thinking in program design. The systematic process from Empathize through Test ensured genuine alignment with school and community contexts. This aligns with design thinking principles emphasizing user-centered approaches and iterative development.

Participatory Management significantly contributed to success, as involvement from all stakeholder groups (administrators, teachers, parents, school committee, and community representatives) ensured that the program authentically responded to actual needs and contexts. This approach is consistent with educational management research emphasizing the importance of stakeholder participation in program development.

The program successfully connected local environment and resources with developing all 7 employability skills. Using waste management and environmental issues as the foundation for developing various competencies demonstrates effective integration of real-world problems with skill development objectives.

However, limitations were found in assessment and evaluation, as all 3 experts indicated inconsistency regarding use of diverse assessment tools and continuous formative assessment—areas requiring improvement and development in future program iterations.

4.2.2 Teacher Competency Development

Results showing teachers' (N=5) competencies at Good level (Mean = 4.06) after program implementation reflect effective teacher capacity development through participatory processes. Notable competencies include curriculum analysis linking local areas (4.16) and objective design (4.12), demonstrating teachers' ability to connect curriculum with local contexts—essential for spatial education management.

Teachers also demonstrated skills in using diverse teaching methods (4.10) and providing feedback (4.10)—essential skills for learner-centered education management. Although overall results were good, competencies in some areas such as assessment tool development remained at moderate levels, indicating need for additional training and support.

Developing appropriate tools and methods for measuring employability skills is thus an important challenge requiring future attention. Having only 5 teachers as the sample may limit result generalizability, though it reflects actual conditions at small rural schools.

4.2.3 Effectiveness on Student Employability

Results clearly demonstrate success in enhancing essential employability skills. Students achieved an overall score of 81.64% (Excellent level), significantly exceeding the established criterion (70%). This success can be attributed to several factors:

All grade levels (7-9) achieving Good to Excellent evaluations indicates program appropriateness for lower secondary age groups, particularly Grade 7 (83.11%) and Grade 9 (82.41%) students achieving Excellent levels. Grade 8 students (78.96%) achieved Good level, which still exceeds criteria and demonstrates program effectiveness.

Students' high satisfaction (Mean = 4.01) is a crucial factor affecting learning effectiveness. High satisfaction reflects genuine learning needs fulfilment and authentic participation. Program strengths include practical activities, connection to real-world contexts, and opportunities for hands-on experience—all consistent with experiential learning and project-based learning principles.

The school's ability to present and disseminate development results at the provincial forum demonstrates potential for expansion and transfer to other schools. However, program sustainability requires continuous support from all stakeholders and adaptation appropriate to each school's specific context.

This research has several important limitations, including using a One-Group Posttest Only Design

without a control group, preventing definitive confirmation that outcomes resulted solely from the program. Future research should employ experimental designs with control groups for more rigorous causal inference.

Results align with project-based learning concepts (Bytyqi, 2021) and experiential learning (Kong, 2021) emphasizing hands-on practice and connecting knowledge with real contexts. Using competency-based approaches focused on developing practical skills rather than just theoretical knowledge proved effective for employability skill development.

Creating industry partnerships (Awasthy et al., 2020) through community representative and stakeholder participation was crucial in connecting the program with local labor market needs.

4.3 Conclusion

This research demonstrates the potential of using spatial education approaches to enhance students' essential employability skills. If limitations can be addressed and development continued according to recommendations, this approach could become an effective model for developing students' quality to meet 21st-century labor market demands, particularly in rural area contexts similar to Banhuaysai School.

Recommendations

1. Policy Recommendations

Supervising agencies should promote expanding this approach to other area schools, adapting appropriately to local contexts, and developing standardized employability skills assessment systems usable as common tools for evaluating basic education students.

2. Practical Recommendations

2.1 Teachers should receive additional training in developing employability skills assessment tools to enhance measurement and evaluation effectiveness.

2.2 Schools should continuously build partnership networks with enterprises and communities to provide students with genuine work experience.

3. Recommendations for Future Research

3.1 Follow-up studies should evaluate developed skills' sustainability and impact on students' labor market entry.

3.2 Comparative studies should examine program effectiveness against traditional learning management methods using experimental designs with control groups.

3.3 Research scope should expand to cover multiple schools and diverse areas to increase result generalizability.

This research demonstrates the potential of using spatial education approaches to enhance students' essential employability skills. If limitations can be addressed and development continued according to recommendations, it can create positive long-term impacts on human resource development and national economic growth.

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