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The Development of the Authentic Assessments Manual in Blended Learning

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Abstract

Background and Aim: The objectives of this research were as follows: 1) to develop the Authentic Assessments manual in Blended Learning and 2) to publish the Authentic Assessments manual in Blended Learning.

Materials and Methods: The sample group used 5 experts in a group discussion for measuring the quality of the manual, and 100 participants for publishing the manual. Research instruments were the manual of Authentic Assessments in Blended Learning, a questionnaire, and a group discussion recording form. Statistical measures used for data analysis include Mean, Standard deviation, and content analysis.

Results: The results of research found that 1) the Authentic Assessments manual in Blended Learning had 4 parts: introduction, Authentic Assessments in Blended Learning, constructing Authentic Assessments in Blended Learning, and a sample of Authentic Assessments in Blended Learning. And 2) the results of manual publishing found that participants' opinions on the manual, overall, it was at a high level in all 4 aspects: content, usability, format, and language.

Conclusion: The Authentic Assessments manual in Blended Learning represents a significant advancement in educational assessment practices. It supports educators in creating meaningful, effective assessments that not only evaluate student performance but also contribute to holistic and impactful learning experiences. By promoting assessment strategies that align with real-world competencies and learner-centered approaches, this manual has the potential to transform instructional practices and elevate the quality of education in blended learning environments.

Keywords: Authentic Assessments; Blended Learning; Authentic Assessments in Blended Learning; Manual

Introduction

The 21st century has transformed education into a dynamic and interconnected domain, where learning transcends traditional systems and incorporates both local and global dimensions. Technology has become a pivotal tool in reducing barriers to knowledge acquisition, fostering multidirectional communication among students, teachers, and parents. Moreover, the educational landscape is evolving towards a more inclusive approach, integrating expertise from diverse fields to address specific challenges and enhance learning environments both within and beyond the classroom. This shift aims to nurture students who are not only intellectually competent but also physically resilient and adaptable to the demands of a rapidly changing world.

The philosophy of Thai education in the 21st century emphasizes significant transformations across various dimensions; Identity Transformation: from being solely citizens of Thailand to embracing a global citizenship perspective. Reorientation of Focus: shifting from producing human capital for economic growth (People to Growth) to fostering growth that supports the potential of individuals in society (Growth to People). Paradigm Shift: moving away from the paradigm of controlling nature to living in harmony with nature. Cultural Transformation: transitioning from a competition-driven culture to a collaborative and sharing society. Driving National Progress: aiming to position Thailand as a First World Nation, not solely

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as a developed country but also as a society that values cultural heritage and national dignity. (Maesincee, 2014)

According to Maesincee (2014), the ultimate goal of Thai education in the 21st century is to cultivate individuals who embody ethical values, well-being, and happiness. These individuals are envisioned to contribute to the country's balanced and sustainable development while fostering a well-being society. At the macro level, the overarching purpose of education is encapsulated in the desired "outputs of the education system", which encompass five key objectives: (1) Access, ensuring inclusive participation in education; (2) Equity, addressing disparities across social and economic groups; (3) Quality, enhancing educational standards; (4) Efficiency, optimizing resource utilization; and (5) Relevance, aligning education with evolving societal contexts (Maesincee, 2014).

Authentic assessment also serves as a developmental tool, enabling teachers to monitor students' progress over time and provide formative feedback that supports continuous improvement (Department of Curriculum and Instruction Development, 1997). However, recent studies have identified significant challenges among secondary school teachers in developing and implementing effective assessment tools. Many teachers lack the necessary knowledge and skills in educational measurement. Contributing factors include high workload, limited awareness of the role of assessment in learning, an overwhelming number of curriculum indicators, differing teacher attitudes, hierarchical school culture, and limited parental engagement in the assessment process.

Authentic assessment is characterized by its focus on meaningful learning outcomes. It assesses students' actual performance based on what they have learned and can apply in realistic contexts. Assessment tasks are designed to mirror real-life activities, enabling students to perceive them as part of their everyday lives. These tasks often require critical and creative thinking, offer multiple pathways to solutions, and promote collaboration over extended periods. As a result, a wide array of assessment tools and techniques is required to capture the complexity and depth of student learning (Phinyou-ananthaphong, 2001). To address these challenges, capacity building through hands-on professional development workshops has been identified as a key strategy. Such training enhances teachers' understanding of the importance of assessment, equips them with practical skills in developing appropriate assessment instruments, and fosters a more reflective and evidence-based teaching practice (Thanraworn & Tangthanakarnon, 2017).

Blended Learning is an instructional approach that combines face-to-face classroom methods with online learning activities. Its primary objective is to integrate the strengths of traditional in-person instruction with the advantages of online learning, thereby promoting active, self-directed learning while reducing the amount of time required for in-class teaching (Garnham & Kaleta, 2002). This approach allows for greater flexibility in content delivery, encourages learner autonomy, and supports more personalized and engaging learning experiences.

Blended learning environments can be designed to foster challenging, inquiry-based learning tasks that respond to individual differences in learners' needs, preferences, and learning potential. By leveraging both synchronous and asynchronous modes of instruction, blended learning accommodates diverse learning styles and provides multiple pathways to understanding. This leads to improved self-regulated learning skills among students, enabling them to take greater responsibility for their learning process (Driscoll, 2002).

Moreover, research has shown that blended learning can significantly enhance student academic achievement by providing enriched learning opportunities that are more accessible, flexible, and learner-centered. When thoughtfully designed and implemented, blended learning has the potential to maximize learning outcomes and improve overall educational effectiveness (Singh, 2003).

This study seeks to explore the strategies and innovations required to achieve these educational objectives in Thailand, particularly in response to the rapidly shifting global and local paradigms. With a focus on improving educational quality and addressing changing societal demands, the research aims to

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provide actionable insights that contribute to Thailand's long-term educational goals and its aspiration to build a well-being nation.

Objectives

1. To develop a manual for Authentic Assessments in Blended Learning.
2. To publish a manual for Authentic Assessments in Blended Learning.

Literature review

Authentic Assessment

Definition of Authentic Assessment

Authentic Assessment refers to the evaluation of students' behavior with an emphasis on performance, processes, and outcomes using real-life situations or scenarios that students may encounter. The assessment scenarios must be appropriate for each grade level, focusing on evaluating students' actual performance rather than relying solely on multiple-choice tests. The criteria for authentic assessment should align with students' behaviors and practices to determine their level of knowledge, skills, and competencies. (Wiggins, 1990; Mayer, 1992; Hart, 1994; Gay, 1996; Frey, 2014).

Characteristics of Authentic Assessment

Frey (2014) and Whitlock and Nanavati (2013) described the characteristics of Authentic Assessment, which can be classified into nine types and categorized into three main aspects: Assessment Context, Student's Role, and Scoring. These characteristics were summarized as follows (Ong-ardwanit and Boonrod, 2021):

1) Assessment Context: Authentic Assessment should closely resemble and align with real-life situations to accurately evaluate students based on challenges they may encounter in reality (Frey, 2014). Teaching and learning activities should encourage students to demonstrate behaviors that instructors aim to assess in a setting as close to reality as possible. Additionally, Authentic Assessment activities should be complex and incorporate instructional strategies that foster the development of diverse skills, such as Performance-Based Skills, planning, problem-solving, and creativity. These activities not only serve as effective assessment tools but also enhance students' overall competencies, such as real-time problem-solving in practical situations.

2) Student's Role: Authentic assessment should provide students with opportunities to discuss their scores, express opinions on their evaluations (Self-Assessment), and engage in an open assessment process. This approach ensures that students are not restricted in their evaluation and allows them to exercise critical thinking regarding their performance. Furthermore, it promotes active learning, enabling students to showcase their potential and various skills. Additionally, authentic assessment emphasizes formative assessment, which involves continuous evaluation throughout the learning process rather than solely assessing students at the end of the course. This ongoing assessment approach fosters collaboration between instructors, students, and peers, encouraging active participation in refining teaching and learning methods to achieve the desired educational outcomes.

3) Scoring Authentic Assessment empowers students by giving them access to the assessment criteria and allowing them to participate in the development and refinement of their evaluation methods. This process ensures that the assessment aligns with the learning objectives. A study by Bharuthram and Patel (2017) found that when students collaborate with instructors in designing assessments, it boosts their confidence and motivation, enabling them to achieve their learning goals more effectively. Additionally, using varied assessment methods, indicators, and tools allows for a more comprehensive evaluation of students' abilities. Importantly, authentic assessment does not focus on ranking students but rather on providing constructive feedback, highlighting strengths and areas for improvement. This approach facilitates continuous learning and adaptation to evolving Real-World Situations (Payne et al., 2019).

Components of Authentic Assessment

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Gulikers et al. (2004) studied the components of the Five-Dimensional Model for Authentic Assessment, which consists of the following elements:

1. Authentic Assessment Tasks. This includes:
   1.1 Authentic tasks applied to new situations
   1.2 Integration of knowledge and skills
   1.3 Emphasis on meaningful connections beyond mere knowledge acquisition
2. Physical or Virtual Context. This consists of:
   2.1 Realistic and applicable contexts
   2.2 Diverse learning resources
   2.3 Consideration of time constraints
3. Social Context. The role of social interactions and collaboration in the assessment process.
4. Authentic Assessment Results. The outcomes of the assessment reflect students' real-world competencies.
5. Authentic Criteria. The standards used to evaluate students' performance in alignment with authentic assessment principles.

Several studies have contributed to the development of authentic assessment practices in various educational contexts. Sottipholanan (2016) examined the enhancement of authentic assessment competencies among graduate diploma students through activity-based and project-based learning, revealing that over 60% had never received prior training and that post-intervention, nearly 44% achieved a good competency level with high satisfaction. Saramano et al. (2018) developed and implemented an authentic assessment model to improve analytical thinking in Grade 8 students, structured in two main phases with seven steps. The model significantly enhanced students' thinking abilities and was rated highly in terms of satisfaction and effectiveness. Wangsow (2018) utilized participatory action research to establish eight authentic assessment standards for primary school teachers under OBEC, validated through expert consensus and found to be highly effective, with all indicators receiving top-level ratings. Similarly, Nernprom (2020) designed a training curriculum to build vocational teachers' competencies in digital-based authentic assessment, demonstrating statistically significant knowledge gains, high levels of practical application (85.54%), and strong participant satisfaction. Collectively, these studies underscore the importance of structured training, model development, and practical implementation in advancing authentic assessment competencies across diverse educational levels.

Blended Learning

Definition of Blended Learning

Blended Learning refers to an instructional approach that combines face-to-face learning with online learning. This method takes into account learners, learning environments, content, and situations to accommodate individual differences. Blended learning can be implemented both inside and outside the classroom, integrating traditional in-class instruction with online learning in a way that maximizes benefits for students. The in-class learning experience should be designed with a learner-centered approach, ensuring the most effective instructional methods, while online learning integrates innovations and technology to enhance teaching and learning. Blended learning incorporates the best aspects of both traditional and online learning, merging them into a cohesive and effective learning experience.

Blended learning can be implemented in five different ways: On-site – learning at school; Online – learning via the internet; On-Air – learning through the Distance Learning Foundation under the Royal Patronage (DLTV); On-Demand – learning through various applications; and On-Hand – learning at home using printed materials. This instructional approach has been discussed and developed by various scholars, including Collis and Moonen (2001), Valiathan (2002), Thorne (2003), Bonk and Graham (2006), Na Songkhla (2007), Wanpirun (2008), Klaisang (2011), and Nilsuk & Wanpirun (2013).

Oliver and Trigwell (2005) stated that Blended Learning, according to the defined concepts, involves 4 types of integration as follows: 1) Integrating instructional technology from web-based instruction to align with the specified goals or objectives. 2) Integrating academic-oriented approaches to enhance

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learning outcomes without incorporating other instructional technologies. 3) Integrating instructional technology methods into specialized curricula and/or training programs. 4) Integrating instructional technology into regular work or conventional learning processes.

Components of Blended Learning

Carman (2005) identified 5 key components of Blended Learning, as follows:

1. Live Events. Learning experiences that occur in real-time, known as synchronous learning. These can be based on actual events or simulated scenarios, allowing learners to participate simultaneously.

2. Online Content. A form of self-paced learning where learners engage with content at their own readiness and learning speed. This includes interactive learning, internet-based research, or training through CD-ROM materials.

3. Collaboration. A learning environment where learners can communicate and share information with others through online media such as email, chat, and blogs.

4. Assessment. A structured evaluation process that tracks learning progress at various stages, including pre-assessment (before learning), self-paced evaluation (during learning), and post-assessment (after learning). This ensures continuous improvement in the learning process.

5. Reference Materials. Learning and project creation in a blended learning environment require research and referencing from various sources to enhance learning quality. This may involve searching for information via search engines, accessing materials through PDAs, downloading PDFs, and other digital resources.

Rovai & Jordan (2004) identified four 4 components of Blended Learning as follows:

1. Blended Multimedia and Virtual Internet Resources. This includes videos or DVDs, virtual field trips, interactive websites, software, as well as radio and television broadcasts.

2. Blending Classroom Instruction with Web-Supported Learning Environments. This approach integrates Web-based tools to support classroom learning by facilitating assignments, homework submissions, tests, grade announcements, and class policies. Instructors may create their educational websites or link to relevant external websites to enhance learning.

3. Blending Learning with Course Management Systems (CMS) / Learning Management Systems (LMS). Instructors utilize learning management systems to facilitate communication and manage classroom activities such as distributing instructional materials, setting assignment deadlines, and collecting student work. Suitable LMS platforms for blended learning include WebCT, Blackboard, Moodle, Schoology, and Edmodo.

4. Blending Synchronous and Asynchronous Discussions. This approach integrates traditional classroom activities with online learning by incorporating both synchronous (real-time) and asynchronous (delayed) discussions. Online instructional technologies are used to enhance face-to-face learning environments. Instructors facilitate discussions by setting topics and fostering interactions that simulate in-class discussions among students.

Research on blended learning and its integration with assessment and instructional strategies has shown promising outcomes in enhancing students' cognitive and problem-solving skills. Klinthian (2017) developed a virtual science laboratory based on the ViSPA model to foster analytical thinking among lower secondary students, reporting significantly higher post-test scores, an average scientific project skill score of 78.08%, and high student satisfaction. Yasin, Azman Ong, and Abd Aziz (2020) identified key success factors for blended learning in higher education, including technology access, online communication skills, and learning attitudes, though technical self-efficacy did not significantly affect learning readiness. In primary education, Yuliyana, Rochmiyati, and Maulina (2021) proposed a blended learning assessment model using the ADDIE framework, emphasizing a triangulated approach involving self-, peer-, and teacher assessments aligned with cognitive learning domains. Similarly, Kongphuthon (2020) applied a problem-based blended learning model enhanced with social media tools in a Grade 8 classroom, finding that real-world problem scenarios and activity-based learning significantly promoted structured thinking and problem-solving abilities. These studies collectively affirm the pedagogical potential of blended learning,

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particularly when combined with authentic tasks, structured assessment models, and technology-mediated learning environments to support 21st-century skills.

Conceptual Framework

In this research, the independent variable was the implementation of the Authentic Assessments manual in a Blended Learning environment, while the dependent variable was participants' opinions regarding its use. The framework was designed to explore the effectiveness, relevance, and applicability of the manual by focusing on user perceptions, as these are critical indicators of both the manual's practical value and its alignment with learner-centered assessment principles. The structure of the framework reflects the underlying assumption that the implementation of well-designed instructional tools, such as an authentic assessment manual, can significantly influence stakeholders' attitudes, perceived utility, and satisfaction with assessment practices.

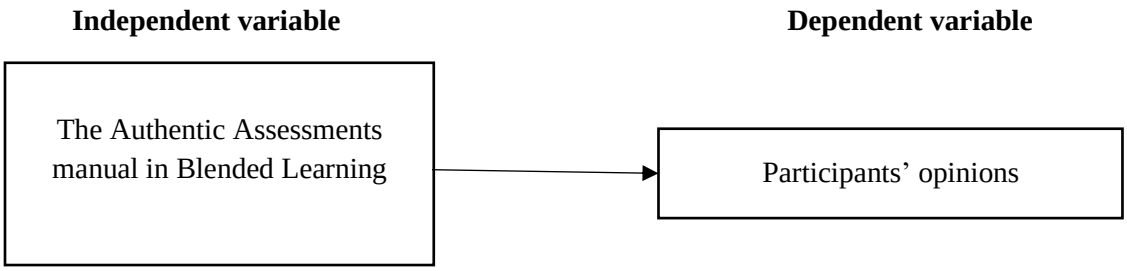

Figure 1 The figure of the Research Conceptual Framework

Methodology

This study was a research and development (R&D) methodology. The study was divided into two phases: Phase I (R1D1) focused on the design and development of a manual of Authentic Assessments in Blended Learning, while Phase II (R2D2) involved the implementation and evaluation of the manual of Authentic Assessments in Blended Learning. The details were as follows:

Phase I (R1D1): Design and development of a manual

1. Sample: The samples in phase I consisted of two groups:

1.1Experts. Five individuals with expertise in educational assessment, research, or Blended Learning. This included three experts with extensive experience and recognition in educational measurement and evaluation, and two experts in Blended Learning approaches.

1.2Community Stakeholders. A purposive sample of 60 participants, representing diverse roles, including teachers, learners, families, schools, and communities across various educational disciplines.

2. Research Instruments and Quality Validation. The instruments included: 2.1) Focus Group Questionnaires: Designed to gather feedback on the draft manual. 2.2) Manual Quality Assessment Form: Developed using a 5-point rating scale (Best, 1977). The quality of the tools was validated for content validity by three experts using the Item-Objective Congruence (IOC) method. Only items with an IOC value of 0.50 or higher were retained.

3. Research Procedures. The research was conducted in the following steps:

3.1 Document and Literature Review: An in-depth study of Authentic Assessment and Blended Learning principles.

3.2 Focus Group Discussions: Engaged experts and stakeholders to discuss the framework and content of the manual.

3.3 Drafting the Manual: Developed a draft based on the insights gained from the discussions.

3.4 Manual Quality Assessment: Experts evaluated the draft, and revisions were made according to their feedback before implementation.

4. Data Collection. Data were collected from focus group discussions and the Manual Quality Assessment Form.

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5. Data Analysis. The data from focus group discussions were analyzed by using content analysis to identify key components of the manual. Quantitative data from the manual evaluations were analyzed by using fundamental statistics, including Mean and Standard Deviation, with interpretations based on established criteria.

Phase II (R2D2): Implementation and Evaluation of the Manual of Authentic Learning Assessment in Blended Learning

1. Population and Sample. The population for phase II consisted of 319 schools in Pathum Thani province, Thailand. The sample included 29 schools from this population, with 100 participants selected by purposive sampling. The participants comprised administrators and teachers from various subject groups who agreed to participate in the dissemination program for the manual of Authentic Assessment in Blended Learning.

2. Research Instruments and Validation. The instrument was a questionnaire designed to collect participants' opinions on the manual. This instrument employed a 5-point rating scale (Best, 1977) and was validated for content validity by three experts. The experts assessed the congruence between the questionnaire items and the objectives (Item-Objective Congruence: IOC), retaining only items with an IOC value of 0.50 or higher.

3. Research Procedures. The research was conducted in the following steps:

3.1 Coordination with Schools: Collaborated with 29 schools in Pathum Thani province to facilitate their participation in the dissemination program.

3.2 Manual Dissemination Workshop: Conducted a workshop at Valaya Alongkorn Rajabhat University under the Royal Patronage to present and exchange knowledge on the manual of Authentic Assessment of Blended Learning.

3.3 Evaluation of the Manual: Collected feedback from participants to evaluate the manual's effectiveness and usability.

4. Data Collection. Data were collected through two primary methods: 1) Content analysis of qualitative feedback of the manual, and 2) quantitative data collection by using the questionnaire.

5. Data Analysis. The collected data were analyzed by using Content Analysis to interpret qualitative feedback from participants. Statistical Analysis used basic descriptive statistics, including Mean and Standard deviation, to summarize participants' opinions on the manual, with results interpreted based on predetermined criteria.

Results

1. Results of the Development of a Manual for Authentic Assessment in Blended Learning

The researcher developed a draft version of the manual for Authentic Assessment in Blended Learning and subjected it to review by experts. This review focused on verifying the accuracy, appropriateness, feasibility, and utility of the draft manual. Feedback from the experts was used to refine and improve the manual, which was finalized with the following components:

Part 1: Introduction

1.1 Objectives of the Manual for Authentic Assessment in Blended Learning.
1.2 Instructions for Using the Manual.
1.3 Guidelines for Using the Manual.

Part 2: Authentic Assessment in Blended Learning

2.1 Definition of Authentic Assessment in Blended Learning.
2.2 Concepts of Authentic Assessment in Blended Learning.
2.3 Characteristics of Authentic Assessment in Blended Learning.
2.4 Processes of Authentic Assessment in Blended Learning.
2.5 Criteria for Authentic Assessment in Blended Learning.
2.6 Methods and Tools for Authentic Assessment in Blended Learning.

Part 3: Designing Authentic Assessments in Blended Learning

3.1 Analysis of Standards and Indicators to Design Authentic Assessments in Blended Learning.
3.2 Defining Objectives for Authentic Assessment in Blended Learning Based on Standards and Indicators.
3.3 Assigning Tasks and Designing Situations for Authentic Assessment in Blended Learning.
3.4 Developing Tools Aligned with Authentic Assessment in Blended Learning.
3.5 Identifying Stakeholders for Assessment from Members of the Learning Ecosystem.

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Part 4: Examples of Authentic Assessment in Blended Learning

4.1 Example of Authentic Assessment in Blended Learning for the Mathematics Subject.
4.2 Example of Authentic Assessment in Blended Learning for Thai Subject.
4.3 Example of Authentic Assessment in Blended Learning for the English Subject.
4.4 Example of Authentic Assessment in Blended Learning for Science Subject.

The researcher conducted a validation process for the manual for Authentic Assessment in Blended Learning, utilizing expert evaluation to ensure the manual's accuracy, appropriateness, and coherence. The feedback received was used to revise and improve the content, culminating in a finalized version for dissemination.

The overall quality of the manual was rated at a high level, with a mean score of 4.24 (S.D. = 0.46). The results of the quality evaluation are summarized as follows: The content aspect received the highest mean score, rated overall at a high level (M = 4.33, S.D. = 0.38). The specific evaluations within this category included: Content is accurate and complete (M = 4.67, S.D. = 0.58). Content is relevant to the manual's title (M = 4.33, S.D. = 0.58). Content meets readers' needs (M = 4.33, S.D. = 0.58). Content is sequential and logically ordered (M = 4.00, S.D. = 0.00). Content is up-to-date (M = 4.00, S.D. = 0.00). The design and layout were also rated overall at a high level (M = 4.22, S.D. = 0.58). Specific evaluations included: Page layout is organized and easy to read (M = 4.67, S.D. = 0.58). Manual size is appropriate (M = 4.33, S.D. = 0.58). External appearance is attractive and engaging (M = 3.67, S.D. = 0.58). The language usage received the lowest mean score among the evaluated aspects but was still rated overall at a high level (M = 4.17, S.D. = 0.43). Specific evaluations included: Language is appropriate for the intended audience (M = 4.67, S.D. = 0.58). Language is clear and easy to understand (M = 4.33, S.D. = 0.58). Font size is appropriate and legible (M = 4.00, S.D. = 0.00). Font is well-organized (M = 3.67, S.D. = 0.58), respectively, as shown in Table 1.

Table 1 Results of the Evaluation of the Manual for Authentic Assessment in Blended Learning

No.	Aspect	M	S.D.	Level
1. Design and Layout				
1.1	External appearance is attractive and engaging	3.67	0.58	High
1.2	Manual size is appropriate	4.33	0.58	High
1.3	Page layout is organized and easy to read	4.67	0.58	High
	Overall	4.22	0.58	High
2. Content				
2.1	Content is relevant to the manual's title	4.33	0.58	High
2.2	Content is sequential and logically ordered	4.00	0.00	High
2.3	Content is accurate and complete	4.67	0.58	High
2.4	Content meets readers' needs	4.33	0.58	High
2.5	Content is up-to-date	4.00	0.00	High
	Overall	4.33	0.38	High
3. Language Usage				
3.1	Language is appropriate for the intended audience	4.67	0.58	High
3.2	Language is clear and easy to understand	4.33	0.58	High
3.3	Font is well-organized	3.67	0.58	High
3.4	Font size is appropriate and legible	4.00	0.00	High
	Overall	4.17	0.43	High
	Overall Evaluation	4.24	0.46	High

2. Results of the Dissemination of the Manual for Authentic Assessment in Blended Learning

The manual for Authentic Assessment in Blended Learning was disseminated to a sample of 100 participants, who provided feedback on its suitability. The results of the evaluation indicated that the overall

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appropriateness of the manual was rated at a high level (M = 4.16, S.D. = 0.68). A detailed analysis by aspect is as follows: The content received the highest mean score, rated overall at a high level (M = 4.19, S.D. = 0.65). Key evaluations included: Content is accurate and complete (M = 4.37, S.D. = 0.73). Content is relevant to the manual's title (M = 4.22, S.D. = 0.68). Content meets readers' needs (M = 4.22, S.D. = 0.68). Content is sequential and logically ordered (M = 4.07, S.D. = 0.59). Content is up-to-date (M = 4.05, S.D. = 0.59). The practical application of the manual was rated overall at a high level (M = 4.18, S.D. = 0.67). Specific evaluations included: Knowledge from the manual is useful for authentic learning assessment (M = 4.19, S.D. = 0.68). Knowledge can be applied to design assessments in courses (M = 4.34, S.D. = 0.74). Knowledge is applicable and can be referenced in practice (M = 4.01, S.D. = 0.58). The design and layout of the manual were rated overall at a high level (M = 4.17, S.D. = 0.72). Specific evaluations included: Manual size is appropriate (M = 4.34, S.D. = 0.74). Page layout is organized and easy to read (M = 4.33, S.D. = 0.74). External appearance is attractive and engaging (M = 3.85, S.D. = 0.69). The language usage received the lowest mean score but was still rated overall at a high level (M = 4.08, S.D. = 0.67). Specific evaluations included: Language is appropriate for the intended audience (M = 4.32, S.D. = 0.74). Language is clear and easy to understand (M = 4.18, S.D. = 0.69). Language is clear and easy to understand (M = 3.83, S.D. = 0.68). Font size is appropriate and legible (M = 4.02, S.D. = 0.59).

The manual demonstrated strong suitability across all aspects, with content receiving the highest rating for accuracy and completeness (M = 4.37, S.D. = 0.73). While the design and layout were also highly rated, areas for improvement included enhancing the external appearance and font organization. The overall evaluation supports the manual's readiness for practical application. Details as shown in Table 2.

Table 2 Results of Participant Feedback on the Manual for Authentic Learning Assessment in Blended Learning

No.	Aspect	M	S.D.	Level
1. Design and Layout				
1.1	External appearance is attractive and engaging	3.85	0.69	High
1.2	Manual size is appropriate	4.34	0.74	High
1.3	Page layout is organized and easy to read	4.33	0.74	High
	Overall	**4.17**	**0.72**	High
2. Content				
2.1	Content is relevant to the manual's title	4.22	0.68	High
2.2	Content is sequential and logically ordered	4.07	0.59	High
2.3	Content is accurate and complete	4.37	0.73	High
2.4	Content meets readers' needs	4.22	0.68	High
2.5	Content is up-to-date	4.05	0.59	High
	Overall	**4.19**	**0.65**	High
3. Language Usage				
3.1	Language is appropriate for the intended audience	4.32	0.74	High
3.2	Language is clear and easy to understand	4.18	0.69	High
3.3	Font is well-organized	3.83	0.68	High
3.4	Font size is appropriate and legible	4.02	0.59	High
	Overall	**4.08**	**0.67**	High
4. Practical Application				
4.1	Knowledge from the manual is useful for authentic learning assessment	4.19	0.68	High
4.2	Knowledge can be applied to design assessments in courses	4.34	0.74	High
4.3	Knowledge is applicable and can be referenced in practice	4.01	0.58	High
	Overall	**4.18**	**0.67**	High
	Overall Evaluation	**4.16**	**0.68**	High

Discussion

Citation
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The research findings demonstrate that the Manual for Authentic Assessment in Blended Learning, comprising four sections, is highly appropriate and feasible. The manual aligns closely with the principles of Authentic Assessment by analyzing standards and indicators, defining objectives based on these standards, designing tasks and scenarios, and creating tools that support Authentic Assessment. It also emphasizes the involvement of stakeholders within the learning ecosystem. These components resonate with Wiggins' (1989) concept of Authentic Assessment, which focuses on performance-based evaluations involving knowledge application, reasoning, and higher-order thinking. Such assessments encourage students to engage in meaningful, real-world tasks, offering intrinsic value to learners. Teachers play a facilitative role, providing guidance and support while allowing students to discover and apply knowledge independently.

The manual's structure also aligns with Mayer's (1992) perspective that performance-based assessments require students to demonstrate behaviors and skills that reflect the evaluator's expectations while being applicable in daily life. Similarly, Worthen and Sanders (1993) and Hart (1994) emphasized the importance of focusing on real-world tasks and scenarios, ensuring that assessment reflects practical and relevant learning outcomes. The manual focuses on engaging students in active tasks, consistent with Newmann et al.'s (1995) principles of higher-order thinking, depth of knowledge, and real-world connections. These principles foster critical thinking, help students explore complex relationships, and link classroom learning to external, real-world contexts. The assessment criteria outlined are in line with Nitko's (1996) recommendations, which emphasize the importance of reflecting significant learning goals, the value of task performance, comprehensiveness, and adaptability. These criteria also align with the guidelines proposed by Jiraroh (2009), emphasizing fairness, feasibility, and stakeholder acceptance. Additionally, the tools and methods follow Brown's (2001) suggestions for employing diverse and flexible strategies, such as observation, interviews, and self-reports. These methods enhance the holistic evaluation of student performance, further supported by Thai scholars like Kanjanawasee (2002), who emphasize validity, reliability, and objectivity in assessment tools.

The methods and tools for Authentic Assessment in Blended Learning, detailed in the manual, align closely with Brown's (2001) principles. Brown identified various strategies and tools suitable for Authentic Assessment, including: Observation: A simple and continuous method to evaluate student behaviors during learning activities. Interviews: Structured or informal interviews with prepared, easily understood questions to gather deeper insights. Feedback from Stakeholders: Collecting qualitative data from teachers, peers, and others about students' knowledge, skills, and attributes. Self-Reporting: Enabling students to reflect on and describe their knowledge, understanding, skills, emotions, and processes related to their work. These methods align with Nonthichan's (1997) suggestions, which include additional tools such as: Rating scales, Behavior logs, Questionnaires, Cumulative records, Structured checklists, and Developmental scales.

Furthermore, Kanjanawasee (2002) emphasized the importance of validating assessment tools based on three criteria: Validity: Ensuring the assessment tool aligns with the intended content, objectives, or theoretical constructs. Reliability: Confirming consistent results across repeated uses or varying conditions. Objectivity: Minimizing subjectivity in evaluations, ensuring the tool provides unbiased, accurate measurements. Similarly, Sae-Ngo (2006) highlighted the necessity of diverse assessment tools, including portfolios and other performance-based evaluations. These tools allow for the holistic measurement of students' progress, offering comprehensive insights into their learning development.

The development of Authentic Assessment in Blended Learning, as outlined in the manual, focuses on analyzing standards and indicators to design assessments that reflect real-world application and student-centered learning. This approach aligns with Saramano's (2016) research, which developed an Authentic Assessment model aimed at enhancing analytical thinking skills among Grade 8 students. In the second stage of her study, learning standards and assessment indicators were established for each learning unit. This included analyzing expected learning outcomes and ensuring alignment with the goals of each unit.

Additionally, this approach is consistent with Worasiri's (2007) research, which detailed a structured process for developing Authentic Assessments. This study emphasized analyzing the 2001 Basic Education Curriculum, integrating both core and school-specific curricula to establish comprehensive learning outcomes and a clear framework for instructional and assessment practices. Moreover, Chueachot's (2013) findings further support this methodology, as his research highlighted the importance of setting precise indicators and success criteria for each learning unit in the second stage of assessment development. These indicators not only define clear expectations but also guide educators in aligning instructional activities with assessment goals, ensuring a coherent and effective learning process.

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The process of setting objectives for Authentic Assessment in Blended Learning, as outlined in the manual, adheres to established research-based practices. This process involves analyzing standards and indicators to ensure alignment with learning goals. Saramano (2016) highlighted similar steps in her research, including studying the 2008 Basic Education Curriculum, examining learning standards and core indicators, and analyzing units of study. This structured approach ensures that objectives are clear and aligned with the curriculum's intent to develop desired competencies in learners. This method also aligns with research by Tuntong (2002) and Worasiri (2007), who emphasized the importance of defining evaluation goals that reflect the desired learning outcomes and competencies in students.

The manual focuses on designing tasks and scenarios for Authentic Assessment, which further aligns with the principles of learner-centered and activity-based education. Research by Suksuwan (2001) underscores the need to design instructional activities that enhance individual student abilities while addressing their unique strengths and weaknesses. Additionally, Tuntong (2002) and Worasiri (2007) emphasized creating instructional activities and assessment methods that align with real-world applications and authentic objectives. By integrating instructional media effectively, as suggested by Suttirat (2011), the manual ensures a practical and resource-efficient approach to Blended Learning environments. This also supports the creative and inquiry-based approach suggested by Ruachaiyanich (2015), promoting active learning and problem-solving among students.

The involvement of stakeholders in the assessment process aligns with Saramano's (2016) findings that feedback from peers, teachers, and trainers can provide valuable insights into individual development. Shute (2008) highlighted the importance of feedback in Authentic Assessments, where constructive critiques help learners adjust their behaviors and improve their learning outcomes. Moreover, Crus (2004) found that feedback involving specific and actionable suggestions leads to greater learning efficiency compared to general praise. Similarly, Barton and Collin (1997) suggested that portfolio-based assessments, involving multiple sources of data, offer a comprehensive view of student progress and help communicate learning outcomes effectively to both students and parents. The dissemination of the Manual for Authentic Assessment in Blended Learning revealed that teachers rated its appropriateness at a high level across all aspects. The highest-rated aspect was the content of the manual, followed by its practical application. This feedback aligns with teachers' preferences for clear and applicable content that supports the development of their instructional practices, particularly in the context of Blended Learning. The comprehensible and practical nature of the content further facilitated its use in real-world teaching scenarios, making it a valuable resource for professional growth.

These findings are consistent with the research by Chaiyawut et al. (2017), who evaluated the academic management manual of Chiang Mai Rajabhat University's Faculty of Education. Their study found high-quality ratings across all aspects, including the manual's design, content, and practical application. Similarly, Chongwutiwet & Nilphan (1999) highlighted that an effective manual should feature content that is accessible, relevant, and easily adaptable for practical use. The manual's language and design were rated the lowest among the evaluated aspects. This aligns with the research by Lekkham (2021), which identified practical application as the highest-rated aspect, while manual design was rated the lowest. These findings reflect the importance of ensuring that a manual's language is clear and concise and that its design is visually appealing and user-friendly. This view is supported by Khwanhawech (1987), who emphasized the importance of clarity, aesthetic appeal, and durability in manual design.

Overall, the manual effectively supports the implementation of Authentic Assessments in Blended Learning contexts. It provides structured and comprehensive guidance that bridges theoretical principles with practical applications. By equipping educators with actionable tools and strategies, the manual contributes to fostering meaningful learning experiences and preparing students for real-world challenges. These findings underscore the manual's value as a critical resource for enhancing the quality and relevance of learning assessments.

Conclusion

The Manual for Authentic Assessment in Blended Learning proved to be a highly effective resource for educators, demonstrating strong alignment with the principles of Authentic Assessment. It integrates comprehensive content, practical application strategies, and stakeholder feedback to support the design and implementation of Authentic Assessments in Blended Learning environments. The manual's content was rated the most appropriate, reflecting its relevance and applicability in addressing current educational needs. The practical strategies provided empower teachers to improve their instructional practices and promote

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student-centered learning experiences. However, areas such as language clarity and design were identified as opportunities for further improvement. Enhancing these aspects can increase accessibility and engagement, ensuring the manual is not only functional but also visually appealing and user-friendly. These refinements would make the manual even more impactful in supporting educators' professional development and fostering meaningful learning outcomes.

Overall, the manual contributes significantly to the advancement of Authentic Assessment practices, equipping educators with actionable tools and knowledge. It underscores the importance of integrating theoretical frameworks with practical applications, ultimately promoting deeper learning and real-world skill development among students.

Recommendation

1. Recommendations for Utilizing the Research Findings

1.1 Teachers can utilize the Manual for Authentic Assessment in Blended Learning as a guideline for designing Blended Learning strategies that emphasize authentic learning assessments.

1.2 The developed manual is flexible, allowing educators to adapt its principles and methods to suit specific course content, classroom contexts, and school environments, ensuring alignment with their instructional goals.

1.3 School administrators can use the manual to foster understanding among teachers, parents, communities, and stakeholders about the principles and benefits of authentic learning assessments in Blended Learning environments.

2. Recommendations for Future Research

2.1 Future research should investigate the effectiveness and scalability of the manual across various educational levels, such as primary, secondary, and higher education, as well as across diverse subject areas.

2.2 Studies are recommended to examine the implementation of authentic assessment practices in schools with varying contextual factors, including geographic location, socio-economic status, access to technology, and student diversity.

2.3 Further research should explore the development of alternative formats of the manual-such as digital platforms, interactive applications, or multimedia resources increase accessibility, engagement, and usability for a wider range of educators and stakeholders.

2.4 To address the limitations of the present study, future research should incorporate a broader and more diverse sample size, including participants from different educational institutions and regions, to enhance the generalizability of the findings and validate the manual's effectiveness across different learning environments.

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