Journal of Education and Learning; Vol. 15, No. 4; 2026
ISSN 1927-5250 E-ISSN 1927-5269
Published by Canadian Center of Science and Education

Effectiveness of an Outcome-Based Pedagogical Intervention on the Instructional English Competence of Pre-service Physical Education Teachers

Pongsakorn Sangngeon[1], Pufa Savagpun[1], Wasana Kuna-apisit[1] & Arphat Tiaotrakul[1]

[1] Faculty of Education, Naresuan University, Phitsanulok, Thailand

Correspondence: Arphat Tiaotrakul, Faculty of Education, Naresuan University, Phitsanulok, Thailand.

Received: October 31, 2025 Accepted: January 25, 2026 Online Published: March 12, 2026

doi:10.5539/jel.v15n4p110 URL: https://doi.org/10.5539/jel.v15n4p110

Abstract

This study examined the effectiveness of an outcome-based pedagogical intervention on the instructional English competence of pre-service physical education teachers. A one-group pretest–posttest quasi-experimental design was employed with 60 first-year undergraduate students enrolled in a physical education program at a public university in Thailand. The intervention was implemented through an outcome-based training curriculum aligned with clearly defined learning outcomes, instructional activities, and performance-based assessment. Data were collected using an instructional English competency test administered before and after the intervention and a rubric-based behavioral assessment conducted after training. The data were analyzed using descriptive statistics and paired-samples t-tests. The results revealed a statistically significant improvement in instructional English competence, with the posttest mean score ($M = 41.83$, $SD = 4.96$) significantly higher than the pretest mean score ($M = 28.47$, $SD = 5.21$), $t(59) = 14.62$, $p < .001$. In addition, the behavioral assessment indicated a high overall level of instructional English competence ($M = 4.22$, $SD = 0.39$), with confidence in using English receiving the highest mean score. These findings suggest that outcome-based pedagogical design can effectively translate intended learning outcomes into observable instructional competencies and highlight the potential of Outcome-Based Education as a framework for curriculum development in physical education teacher education.

Keywords: outcome-based pedagogical intervention, instructional English competence, pre-service physical education teachers, curriculum development

1. Introduction

1.1 Introduce the Problem

In contemporary teacher education, the ability to use English effectively for instructional purposes has become an essential professional competency, particularly for pre-service teachers in non-English-major disciplines. In physical education (PE), instructional effectiveness relies heavily on clear verbal explanations, concise commands, classroom management language, and immediate feedback, all of which require functional and context-specific English use rather than isolated grammatical knowledge. Effective instruction in PE therefore depends not only on pedagogical content knowledge but also on the ability to communicate meaningfully and confidently in dynamic classroom and activity-based settings.

Physical education teachers play a crucial role in promoting students' well-being, enhancing the quality of physical education, and fostering better health outcomes for students (Hobbs et al., 2018; Lhendup et al., 2024). These aspects relate to physical fitness, physical function, and physical activity. Promoting physical health as mentioned above must be done through a variety of activities (Tiaotrakul et al., 2023), and using the Content and Language Integrated Learning (CLIL) teaching method helps students develop both motor skills and language skills simultaneously (Salvador-García et al., 2019).

Despite this need, many pre-service physical education teachers continue to experience difficulties using English accurately and confidently during instructional situations. Existing research indicates that English instruction in teacher education programs often emphasizes general language proficiency, with limited opportunities for learners to apply English in authentic teaching contexts (Richards, 2015; Hyland, 2019). As a result, pre-service teachers may demonstrate adequate receptive skills, such as reading and listening, but struggle to perform instructional tasks in English, particularly in practice-oriented disciplines such as physical education. This

mismatch between language learning and pedagogical practice highlights a persistent gap between intended learning outcomes and actual instructional performance.

The ability to communicate and teach in English demonstrates professionalism and competitiveness in the job market. Therefore, practicing vocabulary related to various activities and equipment is crucial for health promotion communication across all age groups. This is a challenging issue for preservice teachers who need to prepare before entering the profession to effectively manage learning (Jin et al., 2013). Previous studies and research have found that one factor promoting physical activity among students is providing teachers with opportunities to practice and develop their skills in physical activity (Tiaotrakul, 2024). This specialized training will effectively prepare preservice teachers by highlighting the importance of English language skills for physical education teachers and increasing their opportunities and career options, allowing them to work and enhance their value.

In the Thai higher education context, this challenge is particularly evident. English learning has traditionally focused on grammar-based instruction and examination-oriented outcomes, which may not adequately prepare students for spontaneous and functional language use in real instructional settings (Baker & Jarunthawatchai, 2017; Kirkpatrick, 2012). Previous studies have shown that Thai university students often experience low confidence and communication anxiety when required to use English orally, especially in professional or performance-based contexts (Woodrow, 2006). For pre-service physical education teachers, these challenges are amplified by the need to manage active learning environments while providing clear and timely verbal instruction.

These characteristics suggest that instructional English competence in this context should be conceptualized as a performance-based professional skill rather than solely as linguistic knowledge.

1.2 Explore Importance of the Problem

The development of instructional English competence among pre-service physical education teachers is increasingly important in higher education systems that aim to align teacher preparation with professional standards and global educational expectations. In Thailand and other non-English-speaking contexts, teacher education institutions are expected to prepare graduates who can communicate effectively in English within academic and professional environments, including classroom instruction and international educational settings.

Accordingly, graduate attributes in teacher education increasingly emphasize communicative competence, instructional performance, and professional readiness.

Outcome-Based Education (OBE) has been widely adopted as a curriculum and instructional framework that emphasizes clearly articulated learning outcomes, constructive alignment between teaching activities and assessment, and the demonstration of observable competencies (Biggs & Tang, 2011; Spady, 1994). Within an OBE framework, learning success is determined by learners' ability to perform specific tasks aligned with intended learning outcomes, rather than by the accumulation of theoretical knowledge alone. Applying OBE principles to instructional English training in physical education may therefore offer a promising approach for bridging the gap between language knowledge and instructional performance.

However, despite the theoretical relevance of OBE to professional skill development, empirical studies examining the effectiveness of outcome-based pedagogical interventions in enhancing instructional English competence within physical education teacher education remain limited. This lack of evidence underscores the need for research that examines how outcome-based instructional design can support the development of functional, performance-oriented English competence among pre-service teachers.

1.3 Describe Relevant Scholarship

Research in English for Specific Purposes (ESP) and Content and Language Integrated Learning (CLIL) emphasizes the importance of embedding language learning within meaningful disciplinary and professional contexts (Coyle, Hood, & Marsh, 2010; Hyland, 2019). In teaching-oriented disciplines, language competence is closely intertwined with pedagogical content knowledge, as teachers must simultaneously manage content delivery, classroom interaction, and learner engagement (Shulman, 1987). Consequently, instructional language competence should be conceptualized as a component of professional teaching performance rather than as a separate linguistic skill.

Studies in teacher education further highlight the value of performance-based assessment in evaluating authentic teaching competencies, particularly when assessing complex skills such as instructional communication and classroom management (Brookhart, 2013; Darling-Hammond et al., 2020). In physical education, effective instruction requires not only technical skill demonstration but also precise verbal guidance and feedback, making

rubric-based assessment an appropriate method for capturing observable teaching performance. Nevertheless, much of the existing literature focuses on general teaching competence or overall language proficiency, with relatively limited attention to instructional English competence situated specifically within physical education contexts. This study responds to this gap by positioning instructional English competence as a measurable pedagogical outcome within an outcome-based training framework.

Taken together, the reviewed literature suggests that developing instructional English competence requires an integrated approach that connects curriculum design, learning processes, and performance-based assessment. While OBE emphasizes clearly articulated outcomes and constructive alignment, empirical evidence on how OBE-based interventions translate intended outcomes into observable instructional English performance in physical education teacher education remains limited. Likewise, ESP and CLIL research underscores the value of contextualized language learning, yet many studies focus on general language development rather than competence demonstrated through authentic teaching behaviors.

This synthesis indicates a clear need to align (a) outcome-based curriculum design (OBE), (b) systematic instructional planning (Backward Design), and (c) language-in-use through disciplinary content (CLIL–ESP) within a single framework. Accordingly, the present study positions instructional English competence as an observable professional outcome and adopts the integrated conceptual framework (Figure *1)* to examine whether an outcome-based pedagogical intervention can effectively enhance competence in measurable teaching performance.

1.4 State Hypotheses and Their Correspondence to Research Design

The purpose of this study was to examine the effectiveness of an outcome-based pedagogical intervention in enhancing the instructional English competence of pre-service physical education teachers. Grounded in Outcome-Based Education (OBE), Backward Design, and Content and Language Integrated Learning (CLIL), the study assumes that instructional English competence can be systematically developed through constructive alignment among learning outcomes, instructional activities, and performance-based assessment.

Instructional English competence is conceptualized as a performance-based professional skill demonstrated through observable teaching behaviors. In this study, it is operationalized through four dimensions: instructional communication in physical education classes, accuracy and appropriateness of language use, classroom management language, and confidence in using English for instruction. These dimensions are assessed using a rubric-based behavioral assessment aligned with the intended learning outcomes of the intervention.

As illustrated in Figure 1, the conceptual framework depicts the alignment between theoretical foundations and instructional practice. The outcome-based training curriculum serves as the pedagogical intervention, while CLIL—operationalized through the 4Cs framework—functions as the core instructional process supporting meaningful English use in authentic physical education contexts.

Based on this framework, the following research hypothesis was tested: Pre-service physical education teachers who participate in the outcome-based pedagogical intervention will demonstrate significantly higher levels of instructional English competence after the intervention than before the intervention.

To test this hypothesis, a one-group pretest–posttest quasi-experimental design was employed. Instructional English competence was measured before and after the intervention using equivalent instruments, and pre–post performance scores were compared to determine the effect of the intervention.

Figure 1. Conceptual framework of the study integrating outcome-based education, backward design, and CLIL–ESP in pre-service physical education teacher training

2. Method

This study adopted a quantitative research approach to examine the effectiveness of an outcome-based pedagogical intervention on the instructional English competence of pre-service physical education teachers. This section outlines the research design, participant characteristics, sampling procedures, research instruments, intervention procedures, and ethical considerations in sufficient detail to enable evaluation of methodological rigor and facilitate potential replication (Creswell & Creswell, 2018).

2.1 Identify Subsections

In accordance with established research reporting standards, the Method section is organized into clearly labeled subsections to present essential methodological information in a systematic and transparent manner (American Psychological Association [APA], 2020). These subsections describe participant characteristics, sampling procedures, research design, measurement instruments, intervention procedures, and ethical considerations. Such an organized structure facilitates readers' evaluation of methodological rigor, internal validity, and the potential replicability of the study (Creswell & Creswell, 2018; Fraenkel, Wallen, & Hyun, 2019).

2.2 Participant (Subject) Characteristics

The participants in this study were 60 first-year undergraduate students enrolled in a physical education teacher education program at a public university in Thailand. All participants were pre-service physical education teachers who were taking an instructional English course as part of their regular curriculum.

Eligibility criteria included enrollment in the physical education program and participation in the instructional English training sessions. Students who were absent from either the pretest or posttest assessments were excluded from the final data analysis. The participants shared similar educational backgrounds and had previously studied English as a foreign language through the national education system.

Although the instructional English training was delivered as part of regular coursework, participation in the

research component—specifically, the use of assessment data for research purposes—was voluntary. Participants were informed that their decision to participate or decline would not affect their course grades, academic evaluation, or standing within the program. Such procedures are consistent with ethical guidelines for research involving human participants, particularly in educational settings where power relationships may exist between instructors and students (Israel & Hay, 2006; Sieber & Tolich, 2013).

2.3 Sampling Procedures

A purposive sampling method was employed, as participants were selected based on their enrollment in the targeted physical education teacher education program. This sampling approach is appropriate for educational research in which participants possess specific characteristics directly related to the research objectives (Creswell, 2014). All students in the selected cohort were invited to participate in the study, and those who provided informed consent were included in the research component.

Data collection was conducted in a classroom setting within the university during regularly scheduled instructional periods. No financial or academic incentives were provided for participation. Prior to data collection, participants were informed of the purpose of the study, the research procedures, and their right to withdraw from the research component at any time without academic penalty, in accordance with ethical guidelines for educational research (Fraenkel, Wallen, & Hyun, 2019).

The study was conducted in compliance with institutional and international ethical standards for research involving human participants. The research involved minimal risk and was implemented within the scope of normal instructional activities. Written informed consent was obtained from all participants prior to data collection (World Medical Association, 2013).

All research data were anonymized prior to analysis, securely stored in password-protected digital files, and accessed only by the research team for academic purposes (Creswell & Creswell, 2018). To minimize potential power imbalance between the instructor and the participants, instructional activities were conducted as part of regular coursework, while the use of assessment data for research purposes was managed separately from course evaluation. Participants were informed that all research analyses would be conducted after course completion and that their decision regarding research participation would not influence grading, instructional interaction, or academic evaluation. Ethical approval was exempted in accordance with institutional research ethics guidelines, as the study involved minimal risk and utilized anonymized data collected through routine instructional practice (Sieber & Tolich, 2013).

2.3.1 Sample Size, Power, and Precision

The final sample consisted of 60 participants (n = 60). As the study employed a one-group pretest–posttest quasi-experimental design, all participants received the same pedagogical intervention. In within-subjects research designs, sample size requirements are generally smaller than those of between-group designs, as each participant serves as their own control, thereby increasing statistical power (Cohen, 1988).

The sample size was considered adequate for detecting meaningful pretest–posttest differences in instructional English competence using paired-samples statistical analysis. Previous educational research employing similar quasi-experimental designs has demonstrated that sample sizes of this magnitude are sufficient for identifying significant within-group effects (Creswell, 2014). Accordingly, the precision of the findings is interpreted within the limits of the sample characteristics and the scope of the research design, and no inferences are made beyond the population represented in this study.

2.3.2 Measures and Covariates

In this study, data were collected using three complementary measures to examine the effectiveness of the outcome-based pedagogical intervention on instructional English competence.

***1*) Pretest–Posttest Comparison of Instructional English Competence** The first measure consisted of an instructional English competency test administered before and after the intervention. The test assessed participants' ability to use English for instructional purposes in physical education contexts. Pretest–posttest scores were used to examine changes in overall instructional English competence attributable to the intervention.

***2*) Behavioral Development of Instructional English Use in the Classroom** The second measure focused on participants' behavioral development in using English during instructional activities. This aspect was evaluated using a performance-based rubric designed to assess observable instructional behaviors, including instructional communication, accuracy and appropriateness of language use, classroom management language, and confidence in using English for instruction. Performance-based assessment is considered appropriate for

evaluating complex teaching competencies situated in authentic instructional contexts (Brookhart, 2013; Moskal & Leydens, 2000).

***3)* Learner Satisfaction and Perceived Effectiveness of the Training Curriculum** The third measure examined participants' satisfaction with and perceived effectiveness of the outcome-based training curriculum. Data were collected using a structured questionnaire addressing perceptions of curriculum relevance, instructional activities, learning materials, and overall effectiveness. These data were used to complement performance outcomes and to provide insight into the practical applicability and acceptability of the curriculum.

Content validity of all instruments was established through expert review by specialists in physical education and English language teaching, following standard procedures for educational measurement (Lynn, 1986; Messick, 1995). No covariates were included in the statistical analysis, as the study employed a one-group pretest–posttest design and focused primarily on within-group changes following the intervention.

2.3.3 Research Design

This study employed a one-group pretest–posttest quasi-experimental design to examine the effectiveness of the outcome-based pedagogical intervention on instructional English competence among pre-service physical education teachers. In this design, a single group of participants was measured before and after exposure to the intervention, allowing for the examination of within-group changes attributable to the instructional treatment (Campbell & Stanley, 1963).

Prior to the intervention, participants completed a pretest assessing their instructional English competence. Following completion of the outcome-based training curriculum, the same participants completed a posttest using equivalent measurement instruments. This design is commonly used in educational research when random assignment or the inclusion of a control group is not feasible, particularly in authentic classroom settings where instructional interventions are integrated into regular coursework (Creswell, 2014).

Although the absence of a control group limits causal inference, the one-group pretest–posttest design is appropriate for evaluating changes in performance-based competencies resulting from instructional interventions, especially when supported by multiple sources of data, such as behavioral performance measures and learner perception data (Fraenkel, Wallen, & Hyun, 2019). Accordingly, this design was deemed suitable for addressing the research hypothesis and examining the effectiveness of the outcome-based pedagogical intervention in this study.

2.3.4 Experimental Manipulations or Interventions

The experimental intervention consisted of an outcome-based pedagogical training curriculum designed to enhance instructional English competence among pre-service physical education teachers. The curriculum was developed following the principles of Outcome-Based Education (OBE), with an emphasis on clearly defined learning outcomes, constructive alignment between instructional activities and assessment, and the demonstration of observable performance outcomes (Spady, 1994; Biggs & Tang, 2011).

The curriculum design was guided by the Backward Design framework, which begins with the identification of intended learning outcomes, followed by the alignment of assessment methods and instructional activities to support those outcomes (Wiggins & McTighe, 2005). Based on this approach, a 30-hour training program was developed and organized into five learning units, each consisting of six instructional hours. The learning units addressed authentic professional contexts relevant to physical education teachers: (1) Health and Well-being, (2) My Body, (3) Science and Technology, (4) Sports and Recreation, and (5) Education and Career.

Instructional delivery was implemented through the principles of Content and Language Integrated Learning (CLIL), in which English was used as a medium for learning physical education-related content rather than as an isolated subject. The intervention was operationalized through the CLIL 4Cs framework—Content, Communication, Cognition, and Culture—allowing participants to engage with disciplinary content while simultaneously developing instructional language competence (Coyle, Hood, & Marsh, 2010).

Learning activities were designed in accordance with active learning and English for Specific Purposes (ESP) principles, emphasizing meaningful language use in professional physical education teaching contexts (Hutchinson & Waters, 1987). To enhance transparency and replicability, each 6-hour learning unit followed a consistent instructional sequence. Units began with brief input and teacher modeling of key instructional language, followed by guided practice activities in which participants practiced instructional English through structured tasks such as giving commands, explaining physical activities, and managing classroom routines. Participants then engaged in performance-based practice, including micro-teaching and simulated teaching tasks in small groups. Each unit concluded with formative feedback and structured reflection based on rubric-aligned

criteria. These activities were implemented during regular class sessions over a five-week period, promoting active learner engagement, repeated practice, and the development of observable instructional English competence.

To further enhance transparency and replicability, the instructional time allocation within each 6-hour learning unit was structured as follows. Approximately 60 minutes were devoted to input and teacher modeling of key instructional language, followed by 120 minutes of guided practice activities focusing on instructional commands, explanations, and classroom routines. Performance-based practice, including micro-teaching and simulated teaching tasks in small groups, accounted for approximately 150 minutes. The remaining 30 minutes were allocated to formative feedback, peer discussion, and structured reflection based on rubric-aligned criteria.

3. Results

This section presents the results of the data analysis conducted to examine the effectiveness of the outcome-based pedagogical intervention on the instructional English competence of pre-service physical education teachers. Descriptive and inferential statistics are reported to demonstrate changes in instructional English competence following the intervention, without interpretation beyond the scope of the data.

3.1 Recruitment

Participants were recruited from a cohort of first-year undergraduate students enrolled in a physical education teacher education program at a public university in Thailand. Recruitment and data collection were conducted during a single academic semester as part of scheduled instructional activities within the instructional English course.

All students who met the eligibility criteria were invited to participate in the research component. Eligibility was based on enrollment in the physical education program and attendance in the outcome-based instructional English training sessions. Prior to data collection, participants were informed of the purpose of the study, the research procedures, and their rights as research participants. Written informed consent was obtained from all participants.

Participation in the research component was voluntary, and students were assured that their decision to participate or decline would not affect their course grades, academic evaluation, or standing within the program. Recruitment procedures were designed to minimize potential power imbalance between the instructor and participants, consistent with ethical recommendations for classroom-based educational research (Israel & Hay, 2006; Sieber & Tolich, 2013).

All students who provided consent completed the instructional intervention and all required assessments. No participants withdrew from the study during the intervention or data collection period.

3.2 Statistics and Data Analysis

Descriptive and inferential statistical analyses were conducted to examine changes in instructional English competence following the outcome-based pedagogical intervention. Descriptive statistics, including means and standard deviations, were calculated to summarize participants' instructional English competence scores at the pretest and posttest stages.

To determine whether there was a statistically significant difference between pretest and posttest scores, a paired-samples t-test was employed. This statistical procedure was appropriate given the one-group pretest–posttest quasi-experimental design and the use of continuous outcome measures obtained from the same participants before and after the intervention.

The results indicated a statistically significant improvement in instructional English competence following participation in the outcome-based pedagogical training. The mean posttest score ($M = 41.83$, $SD = 4.96$) was significantly higher than the mean pretest score ($M = 28.47$, $SD = 5.21$), $t(59) = 14.62$, $p < .001$. This finding demonstrates a substantial increase in instructional English competence after the intervention.

Descriptive statistics and the results of the paired-samples t-test are presented in Table 1.

Table 1. Comparison of instructional English competence scores before and after the intervention (n = 60)

Assessment	M	SD	t	df	p
Pretest	28.47	5.21			
Posttest	41.83	4.96	14.62	59	< .001

Note. $p < .001$ indicates a statistically significant difference between pretest and posttest scores.

All statistical analyses were conducted using standard statistical software. The level of statistical significance was set at .05.

3.3 Ancillary Analyses

No ancillary, subgroup, or exploratory analyses were conducted in this study. The analysis focused exclusively on overall instructional English competence as the primary outcome variable, in accordance with the stated research objectives and the one-group pretest–posttest quasi-experimental design.

Given the relatively homogeneous characteristics of the participant cohort and the limited sample size, additional subgroup analyses or adjusted statistical models were not deemed appropriate. Accordingly, no covariates were included, and no post hoc or sensitivity analyses were performed beyond the planned pretest–posttest comparison.

3.4 Participant Flow

A total of 60 participants were recruited and enrolled in the study. All participants who provided informed consent completed the outcome-based pedagogical intervention as well as both the pretest and posttest assessments.

There were no withdrawals, exclusions, or losses to follow-up during the intervention or data collection period. Consequently, data from all 60 participants were included in the primary analyses using a complete-case approach.

3.5 Intervention or Manipulation Fidelity

Intervention fidelity was systematically monitored to ensure that the outcome-based pedagogical intervention was implemented as intended throughout the study period. Fidelity monitoring focused on adherence to the planned curriculum structure, consistency of instructional delivery, and participant engagement during the intervention.

Records of instructional delivery indicated that all instructional sessions were conducted according to the predefined curriculum plan. The intervention consisted of five learning units—Health and Well-being, My Body, Science and Technology, Sports and Recreation, and Education and Career—which were implemented as planned in accordance with the established curriculum structure. The intervention was delivered over a five-week period, comprising a total of 30 instructional hours.

Instructional records confirmed that each learning unit was delivered in alignment with the specified learning outcomes, instructional activities, and performance-based assessment procedures outlined during the curriculum design phase. Attendance records indicated full participation across all instructional sessions, and no deviations from the planned instructional sequence, learning objectives, or assessment procedures were observed.

In addition, monitoring data confirmed that alignment among intended learning outcomes, instructional processes, and assessment methods—central to the outcome-based education framework—was consistently maintained throughout the intervention. These findings indicate that the pedagogical intervention was implemented with a high level of fidelity.

3.6 Baseline Data

At baseline, participants shared similar demographic and educational characteristics. All participants were first-year pre-service physical education teachers who had completed prior English language education through the national education system.

Examination of pretest data indicated that participants demonstrated comparable levels of instructional English competence prior to the intervention. No extreme outliers or substantial variability were observed in baseline scores, suggesting a relatively homogeneous cohort at the outset of the study.

3.6.1 Statistics and Data Analysis

All participants who completed the intervention were included in the data analysis. Because no participants withdrew from the study or missed the posttest assessment, complete-case analysis was employed rather than an intention-to-treat approach. This analytic approach was considered appropriate given the one-group pretest–posttest research design and full participant retention throughout the study period.

3.6.2 Adverse Events

No adverse events or negative effects were reported during the intervention period. All instructional activities were conducted within normal classroom settings and posed minimal risk to participants.

3.7 Behavioral Assessment of Instructional English Competence

After completion of the outcome-based pedagogical intervention, participants' instructional English competence was assessed using a performance-based rubric focusing on observable instructional behaviors in physical education contexts. The assessment was aligned with the learning outcomes specified in the study's conceptual framework.

The results showed that overall instructional English competence was at a high level (M = 4.22, SD = 0.39). High mean scores were observed across all assessed dimensions. Confidence in using English for instruction received the highest mean score (M = 4.31, SD = 0.36), followed by instructional communication in physical education classes (M = 4.24, SD = 0.39). Classroom management language was also rated at a high level (M = 4.21, SD = 0.41), while accuracy and appropriateness of language use demonstrated a similarly high performance level (M = 4.10, SD = 0.42).

These findings indicate that participants demonstrated consistently high levels of instructional English competence across all behavioral dimensions following the intervention. Descriptive statistics are presented in Table 2.

Table 2 presents the descriptive statistics for the rubric-based behavioral assessment.

Table 2. Behavioral assessment of instructional English competence after the intervention (n = 60)

Assessment Dimension	M	SD	Level
Instructional communication in PE classes	4.24	0.39	High
Accuracy and appropriateness of language use	4.10	0.42	High
Classroom management language	4.21	0.41	High
Confidence in using English for instruction	4.31	0.36	High
Overall	4.22	0.39	High

Note. Scores were based on a five-point performance-based rubric, with higher scores indicating higher levels of instructional English competence.

3.8 Learner Satisfaction and Perceived Effectiveness of the Training Curriculum

Participants' satisfaction with and perceived effectiveness of the outcome-based training curriculum were examined following completion of the intervention. Descriptive statistics were used to summarize participants' responses to the post-intervention satisfaction questionnaire.

The results indicated a high level of overall learner satisfaction with the training curriculum (M = 4.35, SD = 0.41). Participants reported particularly positive perceptions regarding the relevance of the curriculum content to physical education teaching contexts, the appropriateness of instructional activities, and the usefulness of learning materials in supporting instructional English development.

With respect to perceived effectiveness, participants indicated that the training curriculum effectively supported their ability to use English for instructional purposes in physical education settings. High ratings were also observed for items related to increased confidence in using English during teaching activities and the applicability of learned skills to real classroom situations.

Table 3 presents the descriptive statistics for learner satisfaction and perceived effectiveness of the training curriculum.

Table 3. Learner satisfaction and perceived effectiveness of the training curriculum (n = 60)

Evaluation Dimension	M	SD	Level
Relevance of curriculum content to PE teaching	4.38	0.39	High
Appropriateness of instructional activities	4.34	0.42	High
Usefulness of learning materials	4.31	0.44	High
Perceived effectiveness in improving instructional English competence	4.36	0.40	High
Overall satisfaction	4.35	0.41	High

Note. Scores were based on a five-point Likert-scale questionnaire, with higher scores indicating higher levels of satisfaction and perceived effectiveness.

4. Discussion

The purpose of this study was to examine the effectiveness of an outcome-based pedagogical intervention in enhancing the instructional English competence of pre-service physical education teachers. Overall, the findings are consistent with the primary research hypothesis and indicate that participants demonstrated improved instructional English competence following the intervention. Evidence from the pretest–posttest comparison, rubric-based behavioral assessment, and learner satisfaction data collectively suggests that the intervention was effective in supporting the development of instructional English as a performance-based professional skill.

The significant gains observed in posttest scores provide empirical support for the application of Outcome-Based Education (OBE) in instructional English training. Consistent with OBE theory, instructional success is determined by learners' ability to demonstrate clearly defined outcomes rather than by the accumulation of isolated knowledge (Spady, 1994). In this study, instructional English competence was explicitly defined as an observable outcome, and instructional activities and assessments were constructively aligned with this outcome. The results support previous research indicating that constructive alignment plays a critical role in promoting meaningful learning and performance-based competence in higher education (Biggs & Tang, 2011; Harden, 2007).

These findings are particularly relevant for practice-oriented disciplines such as physical education, where instructional effectiveness depends on real-time communication, classroom management, and immediate feedback. Prior studies have emphasized that teachers' professional competence is not limited to content knowledge but also includes the ability to communicate effectively in instructional contexts (Shulman, 1987; Darling-Hammond et al., 2020). The present findings extend this line of research by demonstrating that instructional English competence can be systematically developed through an outcome-based curriculum design that integrates language use with professional teaching tasks.

This interpretation is consistent with pedagogical intervention research showing that structured instructional approaches emphasizing active engagement and interaction can significantly enhance pre-service teachers' instructional performance and conceptual understanding (Lin, 2018).

From the perspective of English language education in Thailand, the findings address a persistent gap between language knowledge and communicative performance. Research has consistently shown that Thai learners often possess basic grammatical knowledge but experience low confidence and difficulty when using English in authentic communicative situations (Kirkpatrick, 2012; Baker & Jarunthawatchai, 2017). Similar challenges have been reported among pre-service teachers in other non-English-speaking contexts, particularly with regard to classroom English use and instructional communication (Nguyen & Ngo, 2021). The substantial improvements observed in this study suggest that an outcome-based pedagogical approach may help bridge this gap by shifting instructional focus from general language proficiency to functional, context-specific instructional performance.

Comparable evidence has been reported by Lin (2018), who noted that pedagogical interventions emphasizing instructional interaction and performance-based practice can effectively reduce the discrepancy between language knowledge and instructional performance.

The high levels of performance observed in the behavioral assessment further reinforce this interpretation. Participants demonstrated consistently strong instructional behaviors across all assessed dimensions, with confidence in using English for instruction emerging as the strongest component. This finding aligns with research indicating that performance-oriented language training and repeated practice in authentic professional tasks can reduce communication anxiety and enhance instructional confidence among pre-service teachers (Alrabai & Moskovsky, 2016; Woodrow, 2006). In physical education settings, where instruction often occurs in dynamic and activity-based environments, such confidence is essential for maintaining effective classroom management and learner engagement.

In addition to performance outcomes, learners reported high levels of satisfaction and perceived effectiveness of the training curriculum. These findings provide important evidence regarding the acceptability and feasibility of the intervention. Previous studies have suggested that learner satisfaction is closely related to perceived relevance, clarity of learning goals, and opportunities for meaningful practice (Kember & Ginns, 2012). In the present study, high satisfaction ratings related to curriculum relevance, instructional activities, and learning materials suggest that participants perceived the training as directly applicable to their future professional roles.

Recent research has similarly indicated that teachers who participate in structured training programs integrating pedagogical frameworks with technological support report increased confidence and perceived instructional

effectiveness (Suksawas, 2026).

The positive learner perceptions may be explained by the integration of Backward Design and Content and Language Integrated Learning (CLIL) principles within the curriculum. Backward Design emphasizes clarity of intended learning outcomes and alignment of instruction and assessment, which has been associated with improved learner engagement and satisfaction (Wiggins & McTighe, 2005; McTighe & Thomas, 2003). At the same time, the use of CLIL enabled participants to develop language competence through meaningful engagement with physical education content rather than through decontextualized language exercises. Prior research has shown that CLIL can enhance both language development and learner motivation by embedding language learning within disciplinary content (Coyle et al., 2010; Dalton-Puffer, 2011). The present findings extend this literature by demonstrating the effectiveness of CLIL within an outcome-based training framework for pre-service physical education teachers.

In addition, collaborative instructional activities such as group work have been shown to increase learner interaction and opportunities for meaningful language use, thereby supporting instructional communication development (Lin, 2018).

From a competency-based teacher education perspective, the effectiveness of the intervention can be explained through the learning mechanisms embedded within the outcome-based design. First, the explicit articulation of instructional English competence as an intended learning outcome clarified performance expectations and guided learners' attention toward observable teaching behaviors. Second, constructive alignment ensured that instructional activities, such as guided practice and micro-teaching, directly supported the targeted competencies, allowing learners to repeatedly practice instructional English in authentic physical education contexts. Third, performance-based assessment and formative feedback functioned as regulatory mechanisms that supported self-monitoring, reflection, and gradual competence development. Together, these mechanisms reflect core principles of competency-based teacher education, in which learning progresses through demonstrated performance rather than content coverage, thereby explaining how the outcome-based pedagogical intervention translated intended outcomes into measurable instructional English competence.

Despite these contributions, several limitations of the study should be acknowledged. First, the use of a one-group pretest–posttest design limits control over potential confounding variables and weakens the strength of causal inference, as improvements in instructional English competence cannot be attributed exclusively to the intervention with absolute certainty. Second, the sample was drawn from a single cohort at one public university in Thailand, which may limit the generalizability of the findings. Third, although the performance-based rubric provided valuable insights into observable instructional behaviors, future research could enhance measurement rigor by employing multiple raters and examining inter-rater reliability.

Nevertheless, the intervention was implemented with high fidelity, and no adverse events were reported, supporting the internal validity of the findings. The consistent alignment among learning outcomes, instructional activities, and assessment—central to the conceptual framework of the study—appears to have functioned as the intended pedagogical mechanism contributing to improved instructional English competence.

In conclusion, this study underscores the potential of outcome-based pedagogical interventions to enhance instructional English competence among pre-service physical education teachers. By explicitly linking language use to professional teaching performance and embedding language learning within authentic disciplinary contexts, the approach addresses both theoretical and practical challenges in teacher education. The findings suggest that Outcome-Based Education, when integrated with Backward Design and CLIL principles, offers a viable framework for curriculum development aimed at improving instructional communication skills in non-English-speaking contexts. These findings are consistent with recent evidence highlighting the benefits of structured pedagogical training and AI-supported instructional design (Suksawas, 2026). Future research employing comparative designs, multi-institutional samples, and longitudinal approaches is recommended to further validate and extend these findings.

Acknowledgments

The author would like to express sincere gratitude to the experts and colleagues who provided valuable academic guidance and constructive feedback throughout the development of this study. Special appreciation is extended to the pre-service physical education teachers who participated in the training program and research activities, whose cooperation made this study possible.

The author also acknowledges the support of the Faculty of Education and the host institution for facilitating the implementation of the instructional intervention and data collection. Any remaining errors are the sole

responsibility of the author.

Authors' contributions

Not applicable.

Funding

Not applicable.

Competing interests

Not applicable.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Canadian Center of Science and Education.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

References

Alrabai, F., & Moskovsky, C. (2016). The relationship between learners' affective variables and second language achievement. *Arab World English Journal*, *7*(2), 77–103. https://doi.org/10.24093/awej/vol7no2.6

American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). American Psychological Association.

Baker, W., & Jarunthawatchai, W. (2017). English language policy in Thailand. *European Journal of Language Policy*, *9*(1), 27–44. https://doi.org/10.3828/ejlp.2017.3

Biggs, J., & Tang, C. (2011). *Teaching for quality learning at university* (4th ed.). Open University Press.

Brookhart, S. M. (2013). *How to create and use rubrics for formative assessment and grading*. ASCD. https://doi.org/10.4135/9781452218649.n15

Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Houghton Mifflin.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

Coyle, D., Hood, P., & Marsh, D. (2010). *CLIL: Content and language integrated learning*. Cambridge University Press. https://doi.org/10.1017/9781009024549

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

Dalton-Puffer, C. (2011). Content-and-language integrated learning: From practice to principles? *Annual Review of Applied Linguistics*, *31*, 182–204. https://doi.org/10.1017/S0267190511000092

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, *24*(2), 97–140. https://doi.org/10.1080/10888691.2018.1537791

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2019). *How to design and evaluate research in education* (10th ed.). McGraw-Hill Education.

Harden, R. M. (2007). Outcome-based education: The future is today. *Medical Teacher*, *29*(7), 625–629.

https://doi.org/10.1080/01421590701729930

Hobbs, M., Daly-Smith, A., McKenna, J., Quarmby, T., & Morley, D. (2018). Reconsidering current objectives for physical activity within physical education. *British Journal of Sports Medicine*, *52*(19), 1229–1230. https://doi.org/10.1136/bjsports-2016-097328

Hutchinson, T., & Waters, A. (1987). *English for specific purposes: A learning-centred approach*. Cambridge University Press. https://doi.org/10.1017/CBO9780511733031

Hyland, K. (2019). *Second language writing* (3rd ed.). Cambridge University Press. https://doi.org/10.1017/9781108635547

Israel, M., & Hay, I. (2006). *Research ethics for social scientists*. SAGE Publications. https://doi.org/10.4135/9781849209779

Jin, J., Yun, J., & Wegis, H. (2013). Changing physical education teacher education curriculum to promote inclusion. *Quest*, *65*(3), 372–383. https://doi.org/10.1080/00336297.2013.791869

Kirkpatrick, A. (2012). English as an Asian lingua franca: The 'lingua franca approach' and implications for language education policy. *Journal of English as a Lingua Franca*, *1*(1), 121–139. https://doi.org/10.1515/jelf-2012-0006

Lhendup, G., Savagpun, P., & Tiaotrakul, A. (2024). Analyzing the impact of an 8-week structured physical activity program on health-related fitness in Bhutanese seventh-grade students. *Physical Education Theory and Methodology*, *24*(6), 971–979. https://doi.org/10.17309/tmfv.2024.6.15

Lin, S.-F. (2018). The effect of group work on English vocabulary learning. *Journal of Education and Learning*, *7*(4), 163–177. https://doi.org/10.5539/jel.v7n4p163

Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing Research*, *35*(6), 382–385. https://doi.org/10.1097/00006199-198611000-00017

McTighe, J., & Thomas, R. (2003). Backward design for forward action. *Educational Leadership*, *60*(5), 52–55.

Messick, S. (1995). Validity of psychological assessment: Validation of inferences from persons' responses and performances as scientific inquiry into score meaning. *American Psychologist*, *50*(9), 741–749. https://doi.org/10.1037/0003-066X.50.9.741

Moskal, B. M., & Leydens, J. A. (2000). Scoring rubric development: Validity and reliability. *Practical Assessment, Research & Evaluation*, *7*(10).

Nguyen, H. T. M., & Ngo, X. M. (2021). Developing English-medium instruction competence for pre-service teachers in EFL contexts. *Journal of English for Academic Purposes*, *52*, 101004.

Richards, J. C. (2015). *Key issues in language teaching*. Cambridge University Press. https://doi.org/10.1017/9781009024600

Salvador-García, C., Chiva-Bartoll, Ó., & Capella-Peris, C. (2019). Bilingual physical education: The effects of CLIL on physical activity levels. *International Journal of Bilingual Education and Bilingualism*, *25*, 156–165. https://doi.org/10.1080/13670050.2019.1639131

Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, *57*(1), 1–22. https://doi.org/10.17763/haer.57.1.j463w79r56455411

Sieber, J. E., & Tolich, M. B. (2013). *Planning ethically responsible research* (2nd ed.). SAGE Publications. https://doi.org/10.4135/9781506335162

Spady, W. G. (1994). *Outcome-based education: Critical issues and answers*. American Association of School Administrators.

Suksawas, W. (2026). Enhancing in-service English teachers' lesson planning skills using genre-based approach and AI for teaching fiction reading. *Journal of Education and Learning*, *15*(3), 180–194. https://doi.org/10.5539/jel.v15n3p180

Tiaotrakul, A. (2024). Factors promoting physical activity and physical development in early childhood. *Journal of Education and Learning*, *13*(6), 306–316. https://doi.org/10.5539/jel.v13n6p306

Tiaotrakul, A., Montiean, S., & Jaruchart, T. (2023). The improvement in physical function among the elderly after participation in the multimodal recreational program. *Journal of Exercise Physiology Online*, *26*(3), 134–143.

Wiggins, G., & McTighe, J. (2005). *Understanding by design* (2nd ed.). ASCD.

Woodrow, L. (2006). Anxiety and speaking English as a second language. *RELC Journal*, *37*(3), 308–328. https://doi.org/10.1177/0033688206071315

World Medical Association. (2013). Declaration of Helsinki: Ethical principles for medical research involving human subjects. *JAMA*, *310*(20), 2191–2194. https://doi.org/10.1001/jama.2013.281053

Appendix A

Research Instruments

Appendix A describes the research instruments used to evaluate instructional English competence and learner perceptions following the outcome-based pedagogical intervention. These instruments were developed to operationalize the dependent variables specified in the conceptual framework (Figure 1).

Table A1. Overview of research instruments

Instrument	Purpose	Data Type	Related Results Table
Instructional English Competence Test	Measure pre–post instructional English competence	Quantitative (test scores)	Table 1
Performance-Based Rubric	Assess observable instructional English behaviors after intervention	Quantitative (ratings)	Table 2
Learner Satisfaction Questionnaire	Examine satisfaction and perceived effectiveness of the training curriculum	Quantitative (Likert-scale responses)	Table 3

Note. This table summarizes the research instruments used in the study and their roles in the evaluation of instructional English competence.

Appendix A1

Instructional English Competence Test

The instructional English competence test was designed to assess pre-service physical education teachers' ability to use English for instructional purposes in authentic physical education contexts. The test consisted of 60 scenario- and task-based items focusing on functional instructional language rather than isolated grammatical knowledge.

Scoring 1 point per item

Total possible score 60 points

Administration Pretest and posttest

Total test scores were used to examine pretest–posttest differences in instructional English competence, as reported in Table 1.

Appendix A2

Performance-Based Rubric for Instructional English Competence

Appendix A2 describes the performance-based analytic rubric used to assess instructional English competence of pre-service physical education teachers after the outcome-based pedagogical intervention. Instructional English competence was defined as a performance-based professional skill demonstrated through observable teaching behaviors.

The rubric consisted of four core dimensions reflecting authentic instructional performance in physical education contexts: instructional communication in physical education classes, accuracy and appropriateness of language use, classroom management language, and confidence in using English for instruction. Each dimension was assessed independently using a five-point scale (1 = very low, 5 = very high). Rubric scores were used to report post-intervention behavioral outcomes, as presented in Table 2.

Table A2. Rubric dimensions

Dimension
Instructional communication in physical education classes
Accuracy and appropriateness of language use
Classroom management language
Confidence in using English for instruction

Note. The rubric dimensions were aligned with the outcome variables reported in Table 2.

Appendix A3

Learner Satisfaction and Perceived Effectiveness Questionnaire

Appendix A3 describes the learner satisfaction and perceived effectiveness questionnaire administered after completion of the outcome-based pedagogical intervention. The questionnaire was designed to examine participants' perceptions of the relevance, appropriateness, and effectiveness of the training curriculum.

Responses were collected using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). The questionnaire consisted of five evaluation dimensions reflecting key aspects of curriculum quality and perceived instructional impact. Descriptive results derived from this questionnaire are reported in Table 3.

Table A3. Evaluation dimensions

Evaluation Dimension
Relevance of curriculum content to physical education teaching
Appropriateness of instructional activities
Usefulness of learning materials
Perceived effectiveness in improving instructional English competence
Overall satisfaction

Note. All items were rated on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). Results are presented in Table 3.

Table A4. Alignment of research instruments with course learning outcomes (CLOs)

Course Learning Outcome (CLO)	Test (A1)	Rubric (A2)	Questionnaire (A3)
CLO1 Vocabulary and basic instructional language	✓	✓	–
CLO2 Classroom instructional communication	✓	✓	✓
CLO3 Listening and comprehension of instructional English	✓	–	–
CLO4 Reading and writing basic instructional texts	✓	–	–
CLO5 Confidence and professional attitudes	–	✓	✓

Note. This table illustrates the alignment between course learning outcomes and research instruments to ensure construct validity and consistency between intended learning outcomes, measurement tools, and reported results.

Instrument Validity and Use

All instruments were reviewed by experts in physical education and English language teaching to ensure content relevance, clarity, and alignment with the intended learning outcomes of the outcome-based training curriculum. The instruments were used exclusively for research purposes and were not incorporated into formal course grading.

Appendix B

Overview of the Outcome-Based Training Curriculum

Appendix B presents an overview of the structure and content of the outcome-based training curriculum implemented as the pedagogical intervention in this study. The purpose of this appendix is to provide a concise description of the training framework aligned with the intended learning outcomes, in order to enhance transparency and replicability, without detailing specific instructional procedures or learning activities.

Table B1. Structure of the outcome-based training curriculum

Learning Unit	Main Content Focus	Duration (hours)
Health and Well-being	Instructional English related to health promotion and physical activity	6
My Body	Vocabulary and instructional language related to body movement and motor skills	6
Science and Technology	Instructional language for using technology in physical education teaching	6
Sports and Recreation	Instructional commands, explanations, and feedback in sports contexts	6
Education and Career	Classroom English and professional communication for physical education teachers	6
Total		**30**

Note. This table presents an overview of the training curriculum structure. Detailed instructional activities and learning procedures are described in the Method section.

Table B2. Alignment of training curriculum content with course learning outcomes (CLOs)

Training Unit	CLOs Addressed
Health and Well-being	CLO1, CLO2
My Body	CLO1, CLO3
Science and Technology	CLO2, CLO4
Sports and Recreation	CLO2, CLO5
Education and Career	CLO2, CLO5

Note. This table illustrates the alignment between training curriculum units and course learning outcomes to demonstrate constructive alignment within the outcome-based training framework.

Table B3. Alignment of training curriculum content with CLIL components (4Cs)

Training Unit	Content	Communication	Cognition	Culture
Health and Well-being	✓	✓	–	–
My Body	✓	✓	✓	–
Science and Technology	✓	✓	–	–
Sports and Recreation	✓	✓	–	✓
Education and Career	✓	✓	–	✓

Note. This table illustrates the integration of CLIL components (Content, Communication, Cognition, and Culture) within each training unit to support instructional English development in physical education contexts.

Curriculum Design Considerations

The training curriculum was developed in accordance with Outcome-Based Education principles and the Backward Design framework. Clearly articulated learning outcomes guided the selection and organization of curriculum content. Instructional delivery emphasized Content and Language Integrated Learning (CLIL), supporting the development of instructional English competence through meaningful use of language in authentic physical education contexts.

Copyrights

Copyright for this article is retained by the author, with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/4.0/).