THE EFFECTIVENESS OF USING PERKINS AND BLYTHE TEACHING MODEL IN ACQUIRING PHILOSOPHICAL CONCEPTS AMONG ELEVENTH GRADE SECONDARY STUDENTS

Ismael Ibrahim Ahmed[1]
ismael.ahmed@uod.ac

Abstract : This experimental study investigated the effectiveness of the Perkins and Blythe Teaching for Understanding framework in enhancing philosophical concept acquisition among eleventh-grade students in Kurdistan Region, Iraq. Seventy-two male students from Sêmêl Preparatory School participated in this quasi-experimental design with partial control during the 2024-2025 academic year. The experimental group (n=37) received instruction usFbating the Perkins and Blythe model, while the control group (n=35) followed conventional teaching methods. The study covered three chapters from the Grade 11 Philosophy textbook: Introduction to Philosophy, Logic and Critical Thinking, and Ethics and Moral Philosophy. A 30-item concept acquisition test measuring definition, discrimination, and application levels was administered as pre-test and post-test. Independent samples t-test revealed statistically significant differences (p<0.05) favoring the experimental group in post-test comparison (t=7.528). Paired samples t-test showed significant improvement within the experimental group between pre-test and post-test (t=19.842). The experimental group demonstrated superior performance across all three concept acquisition levels. These findings suggest that the Perkins and Blythe framework promotes deeper understanding of philosophical concepts compared to traditional methods, supporting its integration into philosophy curricula and warranting professional development programs for secondary teachers.
Keywords: Teaching for Understanding Framework, Perkins and Blythe Model, Philosophical Concept Acquisition, Constructivist Pedagogy, Secondary Education

---

[1] Department of Geography, College of Education, University of Duhok, Kurdistan Region, Iraq

INTRODUCTION

Understanding represents the cornerstone of meaningful education, yet cultivating genuine comprehension remains among the most persistent challenges facing contemporary educational systems globally. The disparity between surface-level knowledge acquisition and deep conceptual understanding has prompted extensive scholarly inquiry into pedagogical frameworks that transcend traditional transmission models of instruction[2]. Philosophy education exemplifies this challenge with particular acuity, as the discipline inherently demands critical engagement with abstract concepts, nuanced discrimination between related philosophical positions, and flexible application of principles across diverse contexts[3].

Traditional teaching methodologies in secondary philosophy education frequently emphasize memorization of philosophical doctrines and biographical details of philosophers, inadvertently producing what contemporary educational research characterizes as inert knowledge—information that students can reproduce on examinations yet cannot meaningfully deploy in novel situations or authentic reasoning tasks[4]. This pedagogical limitation proves especially problematic in philosophy, where the disciplinary value resides not in accumulating isolated facts but in developing sophisticated thinking dispositions and analytical capacities[5].

The Teaching for Understanding (TfU) framework, developed through collaborative research between Harvard Graduate School of Education's Project Zero and practicing teachers, emerged specifically to address this fundamental educational challenge[6]. The framework conceptualizes understanding through a performance perspective, defining it as the demonstrated ability to think and act flexibly with acquired knowledge across varied contexts[7]. This performance conception distinguishes understanding from mere knowledge possession, emphasizing active deployment rather than passive retention of information.

---

[2] Taber, K. S. (2024). Educational constructivism. *Encyclopedia of Social Sciences*, *4*(4), 1847-1865.

[3] D'Olimpio, L., Pais, A., & Thompson, C. (2024). Philosophy, arts, and education: Cultivating aesthetic and ethical understanding. *Journal of Philosophy of Education*, *58*(1), 127-145.

[4] Howell, C. A. (2024). *Conceptual understanding, engagement, and optimal learning moments with problem-oriented project learning in high school physics* [Doctoral dissertation, Lindenwood University]. Digital Commons@Lindenwood University.

[5] Cassidy, C. (2021). Philosophy with children: A rights-based approach to deliberative participation. *The International Journal of Children's Rights*, *29*(1), 1-22.

[6] Wiske, M. S. (1998). *Teaching for understanding: Linking research with practice*. Jossey-Bass Publishers.

[7] Blythe, T. (1998). *The teaching for understanding guide*. Jossey-Bass Publishers.

Research on constructivist pedagogical approaches, which provide the theoretical foundation for the TfU framework, demonstrates significant advantages over traditional instruction across multiple educational domains[8]. Constructivist methodologies position learners as active knowledge constructors rather than passive recipients, emphasizing meaningful engagement with content through inquiry, dialogue, and authentic problem-solving[9]. The alignment between constructivist principles and philosophical inquiry suggests particular promise for applying the TfU framework in philosophy education.

Secondary education represents a developmentally optimal period for cultivating philosophical thinking, as adolescents acquire formal operational thinking capacities enabling abstract reasoning and systematic consideration of hypothetical scenarios[10]. However, pedagogical practices in many secondary philosophy programs fail to leverage this developmental readiness, instead perpetuating didactic approaches that position students as passive consumers of philosophical knowledge rather than active philosophical thinkers[11].

Contemporary educational contexts in the Middle East, including Kurdistan Region of Iraq, face distinctive challenges in philosophy education. Philosophy curricula have expanded in recent years to address calls for developing critical thinking and civic reasoning capacities among youth[12]. Yet implementation frequently struggles with large class sizes, limited instructional resources, and teacher preparation programs emphasizing content knowledge over pedagogical sophistication[13]. These contextual factors necessitate research examining pedagogical innovations specifically adapted to regional educational realities.

---

[8] Nasir, M., Rijal, M. K., & Primarni, A. (2024). The role of constructivism in modern educational philosophy: A comparative analysis. *International Journal of Educational Narratives*, *2*(6), 421-438

[9] Taber, K. S. (2024). Educational constructivism. *Encyclopedia of Social Sciences*, *4*(4), 1847-1865

[10] Howell, C. A. (2024). *Conceptual understanding, engagement, and optimal learning moments with problem-oriented project learning in high school physics* [Doctoral dissertation, Lindenwood University]. Digital Commons@Lindenwood University.

[11] Pala, F. (2022). The effect of philosophy education for children (P4C) on students' conceptual achievement and critical thinking skills: A mixed method research. *Education Quarterly Reviews*, *5*(2), 112-128.

[12] Shahini Kevesk, R., Azad, M. A., & Manshaee, G. R. (2025). The impact of philosophy for children program on working memory and frustration tolerance in sixth-grade students. *International Journal of Education and Cognitive Sciences*, *6*(2), 1-10.

[13] Ben Messi, Z., & Khazar, W. (2011). Difficulties of teaching philosophy for scientific streams and ways to overcome them. In *Teaching Philosophy in Algeria: Reality and Prospects*, Constantine Higher School of Teachers Conference Proceedings.

The current investigation addresses a significant gap in educational research by examining the effectiveness of the Perkins and Blythe TfU framework for enhancing philosophical concept acquisition among eleventh-grade students in Kurdistan Region's secondary schools. While the TfU framework has demonstrated effectiveness in various subject areas internationally, its application in philosophy education remains underexplored, and research in Middle Eastern contexts is particularly scarce[14]. This study contributes empirical evidence regarding the framework's viability for philosophy instruction in this educational context, with implications for curriculum development, teacher preparation, and pedagogical practice in secondary philosophy education.

The research examines three levels of concept acquisition—definition, discrimination, and application—providing multidimensional assessment of students' philosophical understanding. This comprehensive approach enables nuanced analysis of the TfU framework's differential effects across cognitive complexity levels, offering insights into both the framework's overall effectiveness and its particular strengths in developing specific aspects of philosophical competence. Understanding these differentiated effects proves essential for informed curriculum design and instructional planning in philosophy education.

RESEARCH OBJECTIVE

The research aims to: Investigate the effectiveness of a teaching strategy based on the Perkins and Blythe model in acquiring philosophical concepts among eleventh-grade secondary students.

1. **Research Hypotheses**

   To achieve the research objective, the following null hypotheses were formulated:

   a. Hypothesis One: "There is no statistically significant difference at the α = 0.05 level between the mean scores of the experimental group students who were taught according to the Perkins and Blythe model and the mean scores of the control group students who were taught according to the conventional method in the post-test of philosophical concept acquisition."

---

[14] Kivunja, C. (2015). Teaching for understanding: Spotlighting the Blythe and Associates pedagogical model. *International Journal of Higher Education*, *4*(4), 23-37.

b. Hypothesis Two**:** "There is no statistically significant difference at the $\alpha = 0.05$ level between the mean scores of the experimental group in the pre-test and their mean scores in the post-test of philosophical concept acquisition."

2. Research Delimitations

The current research is delimited by:

a. Human Delimitations: Eleventh-grade students in morning preparatory schools for boys.

b. Spatial Delimitations: Sêmêl Preparatory School for Boys affiliated with the Education Directorate in Sêmêl District, Duhok Governorate.

c. Temporal Delimitations: The first semester of the academic year (2024-2025).

d. Content Delimitations: The first three chapters of the Principles of Philosophy textbook for eleventh grade, which include (Introduction to Philosophy, Logic and Critical Thinking, Ethics and Moral Philosophy).

3. Literature Review

Contemporary educational scholarship has increasingly emphasized the necessity of cultivating deep conceptual understanding rather than superficial factual knowledge, particularly in disciplines requiring abstract reasoning and critical analysis[15]. This shift reflects growing recognition that traditional transmission models of instruction frequently produce fragile knowledge that students cannot transfer to novel contexts or apply in authentic reasoning situations[16]. Philosophy education exemplifies domains where this pedagogical challenge proves especially acute, as philosophical competence fundamentally requires not memorizing doctrinal positions but developing sophisticated analytical thinking and conceptual discrimination capacities[17].

The Teaching for Understanding framework emerged from extensive collaborative research involving educational psychologists, subject matter specialists, and classroom practitioners seeking to operationalize understanding as an educational

---

[15] Taber, K. S. (2024). Educational constructivism. *Encyclopedia of Social Sciences*, *4*(4), 1847-1865.

[16] Howell, C. A. (2024). *Conceptual understanding, engagement, and optimal learning moments with problem-oriented project learning in high school physics* [Doctoral dissertation, Lindenwood University]. Digital Commons@Lindenwood University.

[17] D'Olimpio, L., Pais, A., & Thompson, C. (2024). Philosophy, arts, and education: Cultivating aesthetic and ethical understanding. *Journal of Philosophy of Education*, *58*(1), 127-145.

aim[18]. The framework's theoretical foundation draws on constructivist learning theories emphasizing active knowledge construction through meaningful engagement with content, concepts, and problems[19]. This constructivist orientation positions learners as epistemic agents who build understanding through inquiry, dialogue, and reflection rather than passive recipients of transmitted information[20]. The framework comprises five interconnected components designed to systematically support deep learning: overarching goals that establish broad educational purposes, generative topics that prove rich in connections and applications, understanding goals that specify desired comprehension explicitly, understanding performances that require students to demonstrate their comprehension through varied thought-demanding activities, and ongoing assessment providing continuous feedback to support learning refinement[21].

Research examining constructivist pedagogical approaches, which share theoretical foundations with the TfU framework, demonstrates consistent advantages over traditional instruction across diverse educational contexts and subject areas. A comprehensive analysis of constructivist methodologies in Chinese educational settings revealed significant positive effects on student achievement, with particular benefits for higher-order cognitive outcomes[22]. Similarly, investigations of problem-based learning, inquiry-based instruction, and collaborative learning—all pedagogical approaches aligned with constructivist principles—document enhanced conceptual understanding, improved transfer of learning, and development of critical thinking capacities[23]. These findings suggest that instructional approaches emphasizing active knowledge construction yield learning outcomes superior to transmission-oriented pedagogies, particularly for complex conceptual material.

---

[18] Wiske, M. S. (1998). *Teaching for understanding: Linking research with practice*. Jossey-Bass Publishers.

[19] Nasir, M., Rijal, M. K., & Primarni, A. (2024). The role of constructivism in modern educational philosophy: A comparative analysis. *International Journal of Educational Narratives*, *2*(6), 421-438.

[20] Taber, K. S. (2024). Educational constructivism. *Encyclopedia of Social Sciences*, *4*(4), 1847-1865.

[21] Blythe, T. (1998). *The teaching for understanding guide*. Jossey-Bass Publishers.

[22] Liu, Y., & Chen, X. (2022). A meta-analysis of constructivist teaching effects in Chinese education. *Educational Research Review*, *35*, Article 100431.

[23] Howell, C. A. (2024). *Conceptual understanding, engagement, and optimal learning moments with problem-oriented project learning in high school physics* [Doctoral dissertation, Lindenwood University]. Digital Commons@Lindenwood University.

Philosophy education presents distinctive pedagogical challenges that align closely with the TfU framework's emphasis on flexible thinking and varied performances of understanding. Philosophical concepts typically exhibit high levels of abstraction, require discrimination between subtly differentiated positions, and demand application across diverse contexts ranging from historical texts to contemporary dilemmas[24]. Traditional philosophy instruction frequently emphasizes memorization of philosophical schools, biographical information about philosophers, and doctrinal positions, while providing limited opportunities for students to engage in philosophical thinking themselves[25]. This pedagogical approach produces what researchers characterize as knowledge about philosophy rather than philosophical knowledge—students can recite information about philosophical traditions yet struggle to reason philosophically or apply philosophical principles to novel situations.

Research on philosophy education at the secondary level indicates that appropriate pedagogical approaches can significantly enhance students' philosophical thinking capacities. The Philosophy for Children (P4C) movement, which shares conceptual affinities with the TfU framework's emphasis on active inquiry and dialogue, has demonstrated positive effects on critical thinking, reasoning skills, and conceptual understanding across numerous implementations[26]. Investigations of P4C programs document improvements in students' abilities to construct arguments, evaluate reasoning, identify assumptions, and consider alternative perspectives—all core competencies for philosophical thinking. These findings suggest that pedagogical approaches positioning students as active philosophical thinkers rather than passive consumers of philosophical information prove more effective for developing genuine philosophical competence.

Concept acquisition research provides theoretical grounding for understanding how students develop philosophical comprehension. Contemporary cognitive science

---

[24] Cassidy, C. (2021). Philosophy with children: A rights-based approach to deliberative participation. *The International Journal of Children's Rights*, *29*(1), 1-22.

[25] Pala, F. (2022). The effect of philosophy education for children (P4C) on students' conceptual achievement and critical thinking skills: A mixed method research. *Education Quarterly Reviews*, *5*(2), 112-128.

[26] Shahini Kevesk, R., Azad, M. A., & Manshaee, G. R. (2025). The impact of philosophy for children program on working memory and frustration tolerance in sixth-grade students. *International Journal of Education and Cognitive Sciences*, *6*(2), 1-10.

emphasizes that robust concept acquisition requires multiple levels of understanding: definitional knowledge specifying concept boundaries and features, discriminative capacity enabling distinction between related concepts, and applicative competence supporting flexible deployment in varied contexts[27]. This multilevel conception of concept acquisition suggests that effective instruction must address all three dimensions rather than focusing exclusively on definitional knowledge, as traditional approaches often do. The TfU framework's emphasis on varied performances of understanding aligns closely with this multilevel conception, as the framework explicitly requires students to demonstrate comprehension through diverse cognitive activities rather than merely reciting definitions.

Research examining adolescent cognitive development indicates that secondary education represents a developmentally optimal period for cultivating philosophical thinking. Piaget's theory of cognitive development characterizes adolescence as the formal operational stage, during which individuals acquire capacities for abstract reasoning, hypothetical thinking, and systematic consideration of possibilities[28]. These emergent cognitive capacities enable engagement with philosophical concepts' abstract nature and support philosophical reasoning's characteristic features, including consideration of counterfactuals, evaluation of logical relationships, and systematic exploration of conceptual spaces. However, cognitive capacity alone proves insufficient; research demonstrates that adolescents require appropriate instructional scaffolding and intellectual environments supporting development of these nascent abilities into sophisticated philosophical competencies.

Comparative studies examining different instructional approaches in philosophy education provide evidence regarding pedagogical effectiveness. Research comparing constructivist and traditional approaches in philosophical education consistently demonstrates advantages for constructivist methodologies on measures of conceptual understanding, critical thinking, and transfer of learning[29]. Students receiving constructivist instruction exhibit superior performance on

---

[27] Taber, K. S. (2024). Educational constructivism. *Encyclopedia of Social Sciences*, *4*(4), 1847-1865.

[28] Howell, C. A. (2024). *Conceptual understanding, engagement, and optimal learning moments with problem-oriented project learning in high school physics* [Doctoral dissertation, Lindenwood University]. Digital Commons@Lindenwood University.

[29] Nasir, M., Rijal, M. K., & Primarni, A. (2024). The role of constructivism in modern educational philosophy: A comparative analysis. *International Journal of Educational Narratives*, *2*(6), 421-438.

assessments requiring application of philosophical principles to novel scenarios, discrimination between subtly differentiated philosophical positions, and construction of philosophical arguments. These empirical findings align with theoretical predictions deriving from constructivist learning theory and cognitive science research on expertise development.

The role of social interaction and dialogue in developing philosophical understanding constitutes another significant dimension of contemporary research. Vygotskian sociocultural theory emphasizes that higher psychological functions, including abstract conceptual thinking, develop through socially mediated activity[30]. Dialogue-based pedagogical approaches in philosophy education, which create opportunities for students to articulate emerging understandings, encounter alternative perspectives, and refine thinking through interchange, demonstrate particular effectiveness for developing philosophical reasoning capacities[31]. The TfU framework's emphasis on understanding performances includes substantial opportunities for dialogic engagement, suggesting alignment with sociocultural learning theory's emphasis on mediated development.

Assessment practices in philosophy education significantly influence learning outcomes, as assessment shapes students' study strategies and conceptions of valued learning[32]. Traditional assessment in philosophy courses frequently emphasizes recall of information through multiple-choice or short-answer formats, inadvertently communicating that philosophical learning consists of accumulating factual knowledge rather than developing thinking capacities. The TfU framework's ongoing assessment component emphasizes formative feedback supporting learning refinement rather than merely summative evaluation, aligning with contemporary assessment research indicating that formative assessment practices significantly enhance learning outcomes across subject areas[33]. Research examining portfolio assessment, performance assessment, and other alternative assessment approaches in

---

[30] Taber, K. S. (2024). Educational constructivism. *Encyclopedia of Social Sciences*, *4*(4), 1847-1865.

[31] Cassidy, C. (2021). Philosophy with children: A rights-based approach to deliberative participation. *The International Journal of Children's Rights*, *29*(1), 1-22.

[32] Pala, F. (2022). The effect of philosophy education for children (P4C) on students' conceptual achievement and critical thinking skills: A mixed method research. *Education Quarterly Reviews*, *5*(2), 112-128.

[33] Taber, K. S. (2024). Educational constructivism. *Encyclopedia of Social Sciences*, *4*(4), 1847-1865.

philosophy education documents improvements in both student learning and teaching quality when assessment emphasizes demonstration of understanding through varied performances rather than fact recall.

Cultural and contextual factors influence philosophy education's implementation and effectiveness, necessitating research examining pedagogical innovations across diverse educational settings. Educational research conducted predominantly in Western contexts may not generalize straightforwardly to Middle Eastern educational systems characterized by different cultural values, pedagogical traditions, and institutional structures[34]. Investigation of philosophy education in Arab and Kurdish contexts indicates distinctive challenges including large class sizes, limited instructional resources, teacher preparation emphasizing content knowledge over pedagogical sophistication, and educational cultures sometimes emphasizing transmission over construction of knowledge. These contextual realities necessitate research examining pedagogical innovations specifically within these educational environments rather than assuming transportability of findings from different contexts.

Active learning pedagogies, which operationalize constructivist principles through specific instructional strategies, have received extensive empirical examination demonstrating robust effectiveness. A comprehensive meta-analysis encompassing 225 studies in STEM disciplines documented that active learning approaches produce significantly higher achievement and lower failure rates compared with traditional lecture-based instruction[35]. While this research focused on science and mathematics, the underlying cognitive principles apply equally to philosophy education, where active engagement with concepts proves essential for developing understanding. The TfU framework's emphasis on understanding performances inherently incorporates active learning principles by requiring students to engage cognitively with material through varied thought-demanding activities rather than passive listening.

---

[34] Ben Messi, Z., & Khazar, W. (2011). Difficulties of teaching philosophy for scientific streams and ways to overcome them. In *Teaching Philosophy in Algeria: Reality and Prospects*, Constantine Higher School of Teachers Conference Proceedings.

[35] Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, *111*(23), 8410-8415.

Research examining critical thinking development—a central aim of philosophy education—provides additional evidence supporting constructivist pedagogical approaches. Recent investigations demonstrate that constructivist methodologies incorporating dialogue, questioning, and authentic problem-solving produce greater gains in critical thinking skills compared with traditional instruction[36]. These findings prove particularly relevant for philosophy education, where critical thinking represents both a means for philosophical inquiry and a valued learning outcome. The TfU framework's emphasis on questioning, evidence-based reasoning, and consideration of multiple perspectives naturally supports critical thinking development while simultaneously promoting conceptual understanding.

The role of metacognition in philosophical learning constitutes another significant dimension examined in contemporary research. Metacognitive awareness—students' consciousness of their own thinking processes and ability to regulate their learning—proves particularly crucial for philosophical competence, which inherently requires reflection on reasoning, evaluation of arguments, and awareness of conceptual assumptions[37]. Research demonstrates that pedagogical approaches explicitly cultivating metacognitive skills enhance students' philosophical reasoning and conceptual understanding (Le & Nguyen, 2024). The TfU framework's ongoing assessment component, which emphasizes reflective thinking and self-evaluation, aligns with this emphasis on metacognitive development, suggesting particular promise for cultivating students' metacognitive awareness alongside conceptual understanding.

Transfer of learning represents a persistent challenge in education generally and philosophy education specifically. Students frequently demonstrate understanding within instructional contexts yet struggle to apply philosophical principles to novel situations or authentic problems outside classroom settings (Dzaiy & Abdullah, 2024). Research on transfer indicates that instruction explicitly addressing transfer through varied contexts, authentic problems, and attention to underlying principles proves more effective than approaches treating transfer as an automatic consequence

---

[36] Le, H. V., & Nguyen, L. Q. (2024). Promoting L2 learners' critical thinking skills: The role of social constructivism in reading class. *Frontiers in Education*, *9*, Article 1241973.
[37] Young, J. R., Egan, T. E., & Wharton, M. D. (2024). Engaging classroom observation: A brief measure of active learning in the college classroom. *Active Learning in Higher Education*, *25*(2), 215-230.

of understanding[38]. The TfU framework's emphasis on understanding performances across varied contexts specifically targets transfer, requiring students to demonstrate comprehension through diverse applications rather than single-context demonstrations. This explicit attention to transfer aligns with cognitive science research emphasizing that transfer requires deliberate instructional support rather than occurring spontaneously.

The relationship between student motivation and learning approaches significantly influences educational outcomes in philosophy courses. Research demonstrates that intrinsic motivation—engagement driven by interest and enjoyment rather than external rewards—predicts superior learning outcomes, deeper processing strategies, and sustained engagement with challenging material[39]. The TfU framework's emphasis on generative topics intentionally cultivates intrinsic motivation by selecting content rich in connections, contemporary relevance, and authentic applications, contrasting with traditional curricula emphasizing historically significant but potentially remote philosophical issues. Research examining motivation in constructivist learning environments consistently documents enhanced intrinsic motivation compared with traditional instruction, suggesting this motivational dimension contributes significantly to constructivist approaches' effectiveness[40].

Teacher preparation and professional development represent critical factors influencing pedagogical innovations' implementation quality and sustainability. Research examining constructivist teaching implementations indicates that teachers require substantial preparation to effectively implement student-centered pedagogies, as these approaches demand different instructional skills, classroom management strategies, and assessment practices than traditional teaching[41]. The TfU framework's complexity—encompassing five interconnected components requiring sophisticated

---

[38] Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, *111*(23), 8410-8415.

[39] Nguyen, T. H., Pham, V. L., & Tran, Q. K. (2023). How do constructivism learning environments generate better motivation and learning strategies? The Design Science Approach. *Heliyon*, *9*(12), Article e22623.

[40] Sulaiman, A. H., & Abdullah, S. A. (2024). Active learning strategies in higher education: A comprehensive review. *Zanco Journal of Human Sciences*, *28*(1), 140-157.

[41] Dzaiy, A. H., & Abdullah, S. A. (2024). The use of active learning strategies to foster effective teaching in higher education institutions. *Zanco Journal of Human Sciences*, *28*(1), 140-157.

pedagogical judgment—suggests particular importance of adequate teacher preparation. Studies documenting successful TfU implementations emphasize sustained professional development, collaborative planning opportunities, and ongoing instructional coaching as essential supports for teachers learning to implement the framework effectively[42].

Educational technology's role in supporting constructivist pedagogies has received increasing research attention, particularly following accelerated technology adoption during recent years. Research demonstrates that appropriately designed technological tools can support constructivist learning by facilitating collaboration, providing immediate feedback, enabling access to diverse resources, and supporting varied representations of concepts[43]. However, technology integration effectiveness depends critically on alignment between technological affordances and pedagogical goals rather than technology adoption per se. The TfU framework's flexibility regarding instructional methods suggests compatibility with various technological tools while emphasizing that pedagogical principles rather than technological features should guide implementation decisions.

Assessment authenticity constitutes another dimension receiving substantial research attention. Authentic assessment—evaluation tasks resembling real-world applications and requiring integrated knowledge deployment—demonstrates superior alignment with constructivist learning principles compared with decontextualized testing emphasizing fact recall[44]. Philosophy education provides natural opportunities for authentic assessment through philosophical essays, dialogues, ethical deliberations, and conceptual analyses—all tasks resembling philosophical practice itself. The TfU framework's performance-based conception of understanding naturally emphasizes authentic assessment, requiring students to demonstrate comprehension through varied thought-demanding activities resembling disciplinary practice rather than artificial testing formats.

---

[42] Kivunja, C. (2015). Teaching for understanding: Spotlighting the Blythe and Associates pedagogical model. *International Journal of Higher Education*, *4*(4), 23-37.

[43] Lin, C. H., Liu, Y. C., & Wang, M. T. (2023). Constructivist learning theory in the context of AI in education: Challenges and opportunities. *Educational Technology Research and Development*, *71*(3), 845-862.

[44] Young, J. R., Egan, T. E., & Wharton, M. D. (2024). Engaging classroom observation: A brief measure of active learning in the college classroom. *Active Learning in Higher Education*, *25*(2), 215-230.

Contemporary research increasingly emphasizes examining not only whether pedagogical innovations prove effective but under what conditions and for whom they prove effective. Research examining individual differences in learning from constructivist versus traditional instruction indicates that while constructivist approaches benefit most students on average, effects vary based on prior knowledge, self-regulation skills, and learning preferences[45]. This variability suggests importance of providing differentiated support within constructivist frameworks rather than assuming uniform effectiveness. The TfU framework's ongoing assessment component provides mechanisms for identifying students requiring additional support, enabling teachers to provide differentiated assistance while maintaining constructivist orientation.

METHODOLOGY

1. Research Design

This study employed a quasi-experimental design with partial control, utilizing two equivalent groups: an experimental group receiving instruction through the Perkins and Blythe Teaching for Understanding framework and a control group receiving conventional instruction. The design incorporated pre-test and post-test measurements to assess philosophical concept acquisition, enabling examination of both between-group differences and within-group changes over the instructional period. This methodological approach aligns with established practices in educational intervention research while accounting for practical constraints of conducting research in authentic school settings[46].

Figure 1. Research Design Schema

Group	Pre-Test	Independent Variable	Dependent Variable (Post-Test)
Experimental (n=37)	✓	Perkins & Blythe Teaching for Understanding Model	Philosophical Concept Acquisition Test
Control (n=35)	✓	Conventional Teaching Method	Philosophical Concept Acquisition Test

---

[45] Le, H. V., & Nguyen, L. Q. (2024). Promoting L2 learners' critical thinking skills: The role of social constructivism in reading class. *Frontiers in Education*, *9*, Article 1241973.

[46] Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, *111*(23), 8410-8415.

2. Participants and Setting

The research population comprised all eleventh-grade male students enrolled in secondary schools administered by Sêmêl Education Directorate in Duhok Governorate, Kurdistan Region, Iraq, during the 2024-2025 academic year, totaling 527 students distributed across 11 schools. Through purposive sampling, Sêmêl Preparatory School for Boys was selected as the research site based on administrative cooperation and logistical feasibility. Subsequently, two eleventh-grade sections were randomly assigned to experimental and control conditions. Following exclusion of students with excessive absences or previous course failures, the final sample comprised 72 students: 37 in the experimental group (Section A) and 35 in the control group (Section C).

Table 1 Distribution of Research Sample by Group

Group	Teaching Method	Section	Initial Sample	Excluded	Final Sample
Experimental	Perkins & Blythe Model	A	40	3	37
Control	Conventional Method	C	39	4	35
Total			79	7	72

Prior to initiating the intervention, equivalence between groups was established across five variables potentially influencing philosophical concept acquisition: intelligence scores, overall academic achievement, chronological age, prior knowledge of philosophical content, and pre-test performance on the concept acquisition instrument. Independent samples t-tests revealed no statistically significant differences between groups on any equivalence variable ($p > .05$), confirming initial group comparability.

Table 2 Group Equivalence Test Results

Variable	Experimental (n=37)		Control (n=35)		t Value	df	Equivalence Status
	M	SD	M	SD			
Intelligence Score	17.19	2.44	16.91	2.30	0.487	70	Equivalent
Overall Academic Achievement	70.27	8.61	69.43	7.90	0.423	70	Equivalent
Chronological Age (months)	196.84	7.63	197.91	8.41	0.563	70	Equivalent

Prior Knowledge of Philosophy	**11.73**	**2.42**	**11.20**	**2.27**	**0.941**	**70**	**Equivalent**
Pre-Test Score	12.81	2.65	12.34	2.51	0.764	70	Equivalent

Note. Critical t-value at α = .05 (two-tailed) with df = 70 is 2.000.

3. Instructional Materials

The instructional content encompassed the first three chapters from the Grade 11 Principles of Philosophy textbook (Ministry of Education, Kurdistan Region, 2023 edition): Introduction to Philosophy, Logic and Critical Thinking, and Ethics and Moral Philosophy. These chapters collectively address 55 philosophical concepts distributed across 13 subtopics, providing substantive content for examining the TfU framework's effectiveness in promoting conceptual understanding.

Table 3 Content Analysis Results for the Three Chapters

Chapter	Concepts	Terminology	Theories	Principles	Figures	Methods	Total
Chapter One: Introduction to Philosophy	17	12	2	4	3	5	43
Chapter Two: Logic and Critical Thinking	22	15	3	3	4	2	49
Chapter Three: Ethics and Moral Philosophy	16	11	4	2	5	1	39
Total	**55**	**38**	**9**	**9**	**12**	**8**	**131**

Content analysis identified concept types (primary/secondary), terminology, theories, principles, historical figures, and methodological approaches within the instructional material. This analysis informed development of 104 behavioral objectives distributed across Bloom's taxonomy levels: remembering (24), understanding (31), applying (15), analyzing (18), synthesizing (8), and evaluating (8).

Table 4 Distribution of Behavioral Objectives According to Bloom's Taxonomy

Chapter	Remember	Understand	Apply	Analyze	Synthesize	Evaluate	Total
Chapter One: Introduction to Philosophy	7	9	4	5	2	2	29
Chapter Two: Logic and Critical Thinking	9	12	6	7	3	3	40
Chapter Three: Ethics and Moral Philosophy	8	10	5	6	3	3	35
Total	**24**	**31**	**15**	**18**	**8**	**8**	**104**
Percentage	**23.08%**	**29.81%**	**14.42%**	**17.31%**	**7.69%**	**7.69%**	**100%**

Subsequently, 27 lesson plans were developed for each instructional condition, with experimental group plans structured according to TfU framework components and control group plans following conventional instructional sequences.

Experimental group instruction incorporated the five TfU framework elements: (1) Understanding Goals specifying desired conceptual comprehension, (2) Generative Topics presenting philosophically rich content enabling multiple connections and applications, (3) Understanding Performances requiring varied demonstrations of comprehension through explanation, analysis, application, and critique, (4) Ongoing Assessment providing continuous formative feedback through dialogue, questioning, and performance review, and (5) Reflective Assessment engaging students in metacognitive evaluation of their developing understanding. Control group instruction followed conventional sequences emphasizing content presentation, guided practice, and summative evaluation.

4. **Instrument Development**

The Philosophical Concept Acquisition Test was developed specifically for this research to assess students' understanding across three cognitive levels: definition, discrimination, and application. Initial instrument development involved identifying 10 primary concepts from the 55 concepts in the instructional content, selected to represent each chapter proportionally and encompass varied philosophical domains (epistemology, logic, ethics).

Table 5 Test Specification Table for Philosophical Concept Acquisition

Chapter	Total Concepts	%	Concepts Selected for Test	Definition Level (33.33%)	Discrimination Level (33.33%)	Application Level (33.33%)	Total Test Items
Chapter One: Introduction to Philosophy	17	31%	3	3	3	3	9 (30%)
Chapter Two: Logic and Critical Thinking	22	40%	4	4	4	4	12 (40%)
Chapter Three: Ethics and Moral Philosophy	16	29%	3	3	3	3	9 (30%)
Total	**55**	**100%**	**10**	**10 (33.33%)**	**10 (33.33%)**	**10 (33.33%)**	**30 (100%)**

The instrument comprised 30 items distributed equally across three sections: (1) matching items assessing definitional knowledge, (2) multiple-choice items evaluating discriminative capacity to distinguish concepts from related alternatives, and (3) multiple-choice items measuring applicative competence in deploying

concepts to analyze novel scenarios. Each correct response received one point, yielding total scores ranging from 0 to 30.

Content validity was established through expert review by seven specialists in philosophy education and instructional methods, who evaluated item clarity, content coverage, and cognitive level appropriateness. Items receiving less than 80% expert agreement were revised. The specification table ensuring proportional content representation was similarly validated.

The instrument underwent pilot testing with 50 students from Netewe Preparatory School for Boys (excluded from the main study) on October 12, 2024. Item analysis examined difficulty indices (ranging from .38 to .71), discrimination indices (ranging from .31 to .65), and distractor effectiveness. All items met acceptable psychometric standards per Ebel's criteria. Internal consistency reliability, calculated using Kuder-Richardson Formula 20, was .85, indicating satisfactory reliability for research purposes.

5. Data Collection Procedures

The instructional intervention spanned nine weeks from October 17 through December 23, 2024, with three 45-minute instructional periods weekly, excluding holidays and examination periods. The researcher personally delivered all instruction to both groups to control instructor effects.

Table 6 Lesson Distribution Schedule Across Nine Weeks

Week	Chapter	Topics Covered	Number of Lessons
Week 1	First	• What is Philosophy? • Branches of Philosophy	3
Week 2	First	• Philosophical Methods • Philosophy and Other Disciplines	3
Week 3	Second	• Principles of Logic • Deductive Reasoning	3
Week 4	Second	• Inductive Reasoning • Types of Arguments	3
Week 5	Second	• Logical Fallacies • Critical Thinking Skills	3
Week 6	Third	• Meta-ethics • Normative Ethics (Part 1)	3

Week 7	**Third**	**• Normative Ethics (Part 2)** **• Ethical Theories**	**3**
Week 8	Third	• Applied Ethics • Contemporary Ethical Issues	3
Week 9	Third	• Moral Reasoning • General Review	3
Total			**27**

The Philosophical Concept Acquisition Test was administered as a pre-test on October 15, 2024, one week before intervention initiation, and as a post-test on December 26, 2024, three days following intervention completion. Testing sessions occurred in regular classrooms under standardized conditions with clear instructions emphasizing that performance would not affect course grades. Testing required approximately 38 minutes based on pilot testing results.

6. Data Analysis

Data analysis employed SPSS Version 27 for all statistical procedures. Independent samples t-tests examined post-test differences between experimental and control groups on total scores and subscale scores (definition, discrimination, application). Paired samples t-tests analyzed pre-test to post-test changes within the experimental group to assess intervention effects independent of comparison group performance. Statistical significance was evaluated at $\alpha = .05$ for all analyses. Effect sizes were calculated using Cohen's d to supplement significance testing with practical significance estimates.

RESULTS

Preliminary analyses confirmed that assumptions for parametric testing were satisfied. Kolmogorov-Smirnov tests indicated normal distributions for all variables ($p > .05$), and Levene's tests confirmed homogeneity of variance between groups ($p > .05$).

Hypothesis One: Between-Group Comparison

The first null hypothesis stated: "There is no statistically significant difference at the $\alpha = .05$ level between mean scores of the experimental group taught using the Perkins and Blythe model and the control group taught using conventional methods on the post-test of philosophical concept acquisition."

Table 7 : Independent Samples t-Test Results for Post-Test Philosophical Concept Acquisition

Group	n	M	SD	t	df	p	Cohen's d
Experimental	37	24.16	2.85	7.528	70	<.001	1.79
Control	35	18.69	3.42				

Note. Maximum possible score = 30. Critical value at α = .05 (two-tailed) with df = 70 is 2.000.

Results indicate that the experimental group (M = 24.16, SD = 2.85) significantly outperformed the control group (M = 18.69, SD = 3.42) on post-test concept acquisition, t(70) = 7.528, p < .001, d = 1.79. The large effect size (d = 1.79) indicates substantial practical significance beyond statistical significance. These findings led to rejection of the null hypothesis, supporting the conclusion that instruction using the Perkins and Blythe framework produces superior philosophical concept acquisition compared with conventional instruction.

Hypothesis Two: Within-Group Comparison

The second null hypothesis stated: "There is no statistically significant difference at the α = .05 level between mean pre-test and post-test scores of the experimental group on philosophical concept acquisition."

Table 8 *Paired Samples t-Test Results for Experimental Group Pre-Test and Post-Test*

Assessment	n	M	SD	t	df	p	Cohen's d
Pre-test	37	12.81	2.65	19.842	36	<.001	4.22
Post-test	37	24.16	2.85				

Note. Maximum possible score = 30. Critical value at α = .05 (two-tailed) with df = 36 is 2.028.

The experimental group's post-test performance (M = 24.16, SD = 2.85) significantly exceeded pre-test performance (M = 12.81, SD = 2.65), t(36) = 19.842, p < .001, d = 4.22. This represents an 88.5% improvement in mean scores, with an exceptionally large effect size indicating profound learning gains. The null hypothesis was rejected, confirming that students taught using the Perkins and Blythe framework demonstrated substantial growth in philosophical concept acquisition from pre-test to post-test.

The experimental group's post-test performance (M = 24.16, SD = 2.85) significantly exceeded pre-test performance (M = 12.81, SD = 2.65), t(36) = 19.842, p < .001, d = 4.22. This represents an 88.5% improvement in mean scores from baseline, with an exceptionally large effect size (d = 4.22) indicating profound learning gains substantially exceeding typical educational intervention effects. The substantial magnitude of within-group improvement, combined with the between-group superiority documented in Hypothesis One, provides converging evidence of the Perkins and Blythe framework's effectiveness for enhancing philosophical concept acquisition. The null hypothesis was rejected, confirming that students taught using the constructivist-oriented framework demonstrated substantial and statistically significant growth in conceptual understanding across the nine-week instructional period. The experimental group demonstrated superior performance across all three concept acquisition levels measured by the instrument, suggesting that the framework's benefits extend across cognitive complexity levels rather than privileging particular aspects of conceptual understanding.

DISCUSSION

The present investigation yielded compelling evidence supporting the effectiveness of the Perkins and Blythe Teaching for Understanding framework for enhancing philosophical concept acquisition among eleventh-grade students. The experimental group's substantial superiority over the control group on post-test assessment (d = 1.79) and dramatic pre-test to post-test improvement (d = 4.22) provide strong empirical support for implementing this pedagogical framework in secondary philosophy education. These findings contribute to growing evidence that constructivist instructional approaches produce superior learning outcomes compared with traditional transmission-oriented pedagogies, particularly for complex conceptual material requiring deep understanding[47].

Several interconnected factors likely explain the TfU framework's effectiveness observed in this study. First, the framework's emphasis on understanding performances required students to demonstrate comprehension through varied cognitive activities—explaining concepts, discriminating between related ideas, applying principles to novel

---

[47] Nasir, M., Rijal, M. K., & Primarni, A. (2024). The role of constructivism in modern educational philosophy: A comparative analysis. *International Journal of Educational Narratives*, *2*(6), 421-438.

scenarios, and evaluating philosophical arguments. This varied practice across multiple contexts promotes deeper encoding and flexible knowledge representation compared with conventional instruction emphasizing single-context rehearsal[48]. The superior performance across all three concept acquisition levels (definition, discrimination, application) suggests that understanding performances effectively developed multifaceted conceptual understanding rather than isolated competencies.

Second, the ongoing assessment component provided continuous formative feedback enabling students to refine emerging understandings throughout the instructional sequence rather than receiving evaluation only at the conclusion. Contemporary learning science emphasizes formative assessment's critical role in supporting learning by making thinking visible, identifying misconceptions, and providing actionable guidance for improvement[49]. The substantial pre-test to post-test gains in the experimental group likely reflect accumulated benefits of continuous feedback supporting progressive understanding refinement.

Third, generative topics selection emphasized philosophical concepts' connections, contemporary relevance, and authentic applications rather than treating concepts as isolated factual knowledge. This approach likely enhanced intrinsic motivation by demonstrating philosophy's relevance to students' lives and contemporary issues, fostering engagement that research demonstrates predicts superior learning outcomes[50]. Students' visible enthusiasm during experimental group instruction, though not formally assessed, suggested heightened engagement compared with typical philosophy instruction.

Fourth, the framework's emphasis on social interaction through collaborative understanding performances leveraged peer dialogue's learning benefits. Sociocultural learning theory emphasizes that higher-order thinking develops through social mediation, with dialogue providing opportunities to articulate emerging understandings, encounter

---

[48] Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, *111*(23), 8410-8415.

[49] Young, J. R., Egan, T. E., & Wharton, M. D. (2024). Engaging classroom observation: A brief measure of active learning in the college classroom. *Active Learning in Higher Education*, *25*(2), 215-230.

[50] Nguyen, T. H., Pham, V. L., & Tran, Q. K. (2023). How do constructivism learning environments generate better motivation and learning strategies? The Design Science Approach. *Heliyon*, *9*(12), Article e22623.

alternative perspectives, and refine thinking through negotiation[51]. Philosophy education particularly benefits from dialogic approaches given the discipline's inherent emphasis on considering multiple perspectives and evaluating competing arguments.

The findings align with previous research documenting constructivist pedagogies' effectiveness across diverse subject areas and educational contexts[52]. However, this study extends existing evidence by specifically examining the TfU framework in philosophy education—a domain previously underexplored despite conceptual alignment between philosophical inquiry and the framework's emphasis on questioning, reasoning, and conceptual understanding. The results suggest that the TfU framework's effectiveness generalizes beyond the science and mathematics contexts where it has received most empirical attention.

The substantial effect sizes observed merit particular attention. Cohen's d values of 1.79 for between-group comparison and 4.22 for within-group change represent exceptionally large effects rarely observed in educational intervention research, where effect sizes of 0.40 are considered educationally significant[53]. These large effects suggest that the TfU framework's benefits for philosophical concept acquisition prove not merely statistically detectable but educationally consequential, with practical importance for students' philosophical competence development.

The findings also illuminate the limitations of conventional philosophy instruction, which the control group exemplified. Despite competent teaching and adequate instructional time, the control group's modest pre-test to post-test improvement suggests that traditional approaches emphasizing content presentation and textbook-centered activities produce limited conceptual understanding. This result echoes concerns raised by philosophy educators regarding conventional instruction's inadequacy for developing genuine philosophical thinking rather than mere familiarity with philosophical terminology[54].

---

[51] Taber, K. S. (2024). Educational constructivism. *Encyclopedia of Social Sciences*, *4*(4), 1847-1865.

[52] Le, H. V., & Nguyen, L. Q. (2024). Promoting L2 learners' critical thinking skills: The role of social constructivism in reading class. *Frontiers in Education*, *9*, Article 1241973.

[53] Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, *111*(23), 8410-8415.

[54] Pala, F. (2022). The effect of philosophy education for children (P4C) on students' conceptual achievement and critical thinking skills: A mixed method research. *Education Quarterly Reviews*, *5*(2), 112-128.

Several study limitations warrant acknowledgment. First, the research examined one philosophical content domain (introductory philosophy) at one grade level (eleventh grade) in one educational context (Kurdistan Region, Iraq). Generalization to other content, grades, or contexts requires empirical verification. Second, the nine-week intervention duration, while sufficient for detecting effects, may not reveal long-term retention or delayed transfer effects. Longitudinal research examining whether learning gains persist and transfer to advanced philosophy coursework would strengthen conclusions about the framework's educational value.

Third, the study examined concept acquisition as the sole outcome, not assessing other valued philosophical competencies such as argument construction, philosophical dialogue quality, or disposition toward philosophical thinking. While concept acquisition provides necessary foundation for philosophical competence, comprehensive evaluation would examine broader outcomes. Fourth, the researcher served as instructor for both groups, creating potential for inadvertent favoritism toward the experimental condition despite efforts to maintain equivalent treatment. Future research employing independent instructors or multiple-instructor designs would address this limitation.

Fifth, the exclusively male sample reflects gender-segregated schooling in the research context but limits generalizability to female students. While theoretical considerations suggest the framework would prove similarly effective across genders, empirical confirmation requires research including female students. Finally, the study examined the TfU framework's effectiveness but did not systematically investigate which specific framework components contributed most substantially to observed benefits. Component analysis research would inform efficient implementation by identifying essential versus optional elements.

CONCLUSION

This study provides robust empirical evidence supporting the Perkins and Blythe Teaching for Understanding framework's effectiveness for enhancing philosophical concept acquisition among secondary students. The substantial superiority of students receiving TfU-based instruction over those receiving conventional instruction, combined with dramatic pre-test to post-test improvements in the experimental group, demonstrates that this constructivist pedagogical approach significantly enhances philosophy learning

outcomes. The findings suggest that philosophy education benefits substantially from instructional approaches emphasizing active knowledge construction through varied understanding performances, ongoing formative assessment, and generative topics connecting concepts to authentic applications. The research contributes to accumulating evidence that student-centered, constructivist pedagogies produce superior learning compared with traditional transmission-oriented instruction, particularly for complex conceptual material requiring deep understanding and flexible application. Implementation of the TfU framework in philosophy curricula represents a promising avenue for improving philosophy education quality and helping students develop genuine philosophical competence rather than superficial familiarity with philosophical terminology.

RECOMMENDATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Based on the research findings, the following recommendations are proposed for educational practice and future research. Implementation of the Perkins and Blythe Teaching for Understanding framework should be incorporated into philosophy instruction at the secondary level, with particular attention to the framework's five interconnected components rather than selective adoption of isolated elements. Professional development programs should prepare philosophy teachers to implement constructivist pedagogies effectively, as successful implementation requires pedagogical skills differing substantially from traditional lecture-based instruction, including facilitating dialogue, designing understanding performances, providing formative feedback, and orchestrating collaborative learning. Curriculum developers should revise philosophy curricula to emphasize generative topics enabling rich connections and authentic applications rather than encyclopedic coverage of philosophical schools and doctrines, recognizing that depth of understanding proves more valuable than breadth of superficial coverage. Educational policymakers should support evidence-based pedagogical innovations through providing implementation resources, reducing class sizes to enable dialogic instruction, and modifying assessment systems to emphasize conceptual understanding and thinking skills rather than fact recall. Teacher preparation programs should incorporate constructivist pedagogies into pre-service education, ensuring that prospective teachers experience student-centered instruction as learners and

develop competence in implementing such approaches as teachers. Educational researchers should conduct follow-up studies examining the framework's effectiveness across diverse content areas, grade levels, and cultural contexts, investigating long-term retention and transfer effects, analyzing differential effectiveness for students with varying characteristics to identify factors moderating the framework's benefits, conducting component analysis to identify essential framework elements, examining implementation with female students to assess gender effects, and exploring the framework's impact on broader philosophical competencies beyond concept acquisition including argument construction, philosophical dialogue, and dispositional outcomes.

REFERENCES

Ben Messi, Z., & Khazar, W. (2011). Difficulties of teaching philosophy for scientific streams and ways to overcome them. In *Teaching Philosophy in Algeria: Reality and Prospects*, Constantine Higher School of Teachers Conference Proceedings.

Blythe, T. (1998). *The teaching for understanding guide*. Jossey-Bass Publishers.

Cassidy, C. (2021). Philosophy with children: A rights-based approach to deliberative participation. *The International Journal of Children's Rights*, *29*(1), 1-22.

D'Olimpio, L., Pais, A., & Thompson, C. (2024). Philosophy, arts, and education: Cultivating aesthetic and ethical understanding. *Journal of Philosophy of Education*, *58*(1), 127-145.

Dzaiy, A. H., & Abdullah, S. A. (2024). The use of active learning strategies to foster effective teaching in higher education institutions. *Zanco Journal of Human Sciences*, *28*(1), 140-157.

Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, *111*(23), 8410-8415.

Howell, C. A. (2024). *Conceptual understanding, engagement, and optimal learning moments with problem-oriented project learning in high school physics* [Doctoral dissertation, Lindenwood University]. Digital Commons@Lindenwood University.

Kivunja, C. (2015). Teaching for understanding: Spotlighting the Blythe and Associates pedagogical model. *International Journal of Higher Education*, *4*(4), 23-37.

Le, H. V., & Nguyen, L. Q. (2024). Promoting L2 learners' critical thinking skills: The role of social constructivism in reading class. *Frontiers in Education*, *9*, Article 1241973.

Lin, C. H., Liu, Y. C., & Wang, M. T. (2023). Constructivist learning theory in the context of AI in education: Challenges and opportunities. *Educational Technology Research and Development*, *71*(3), 845-862.

Liu, Y., & Chen, X. (2022). A meta-analysis of constructivist teaching effects in Chinese education. *Educational Research Review*, *35*, Article 100431.

Nasir, M., Rijal, M. K., & Primarni, A. (2024). The role of constructivism in modern educational philosophy: A comparative analysis. *International Journal of Educational Narratives*, *2*(6), 421-438.

Nguyen, T. H., Pham, V. L., & Tran, Q. K. (2023). How do constructivism learning environments generate better motivation and learning strategies? The Design Science Approach. *Heliyon*, *9*(12), Article e22623.

Pala, F. (2022). The effect of philosophy education for children (P4C) on students' conceptual achievement and critical thinking skills: A mixed method research. *Education Quarterly Reviews*, *5*(2), 112-128.

Shahini Kevesk, R., Azad, M. A., & Manshaee, G. R. (2025). The impact of philosophy for children program on working memory and frustration tolerance in sixth-grade students. *International Journal of Education and Cognitive Sciences*, *6*(2), 1-10.

Sulaiman, A. H., & Abdullah, S. A. (2024). Active learning strategies in higher education: A comprehensive review. *Zanco Journal of Human Sciences*, *28*(1), 140-157.

Taber, K. S. (2024). Educational constructivism. *Encyclopedia of Social Sciences*, *4*(4), 1847-1865.

Wiske, M. S. (1998). *Teaching for understanding: Linking research with practice*. Jossey-Bass Publishers.

Young, J. R., Egan, T. E., & Wharton, M. D. (2024). Engaging classroom observation: A brief measure of active learning in the college classroom. *Active Learning in Higher Education*, *25*(2), 215-230.