# THE CONTRIBUTION OF AZERBAIJANI PHILOSOPHERS TO THE METHODOLOGY OF TEACHING PHYSICS: HISTORICAL PERSPECTIVES AND MODERN EDUCATIONAL TRANSFORMATIONS

**Gulshen Musayeva Ali**
gulshan.musayeva@adpu.edu.az

**ABSTRACT**
This article explores the contribution of Azerbaijani philosophers to the methodology of teaching physics by examining the interplay between philosophical thought, educational theory, and contemporary pedagogical practice. Grounded in the philosophy of science and education, the study adopts a qualitative, theory-driven approach that integrates thematic content analysis, historical–interpretive analysis, and comparative synthesis of relevant scholarly literature. The findings indicate that Azerbaijani philosophical traditions have significantly influenced physics education by emphasizing the epistemological foundations of scientific knowledge, the nature of science, and the humanistic aims of education. Historically, Azerbaijani philosophers contributed to shaping physics teaching methodologies that balanced scientific rigor with moral, cultural, and civic values, particularly during periods of educational transformation. In the modern context, these philosophical perspectives align with international trends in science education, including constructivist learning, inquiry-based instruction, and argumentation-centered pedagogy. The study demonstrates that Azerbaijani contributions do not merely mirror global models but offer a culturally grounded and integrative framework that enriches the methodology of teaching physics. By highlighting the enduring relevance of philosophical reflection in physics education, the article underscores the potential of national intellectual traditions to inform innovative and reflective teaching practices in contemporary educational systems.
**Key Words:** philosophy of education; physics education methodology; Azerbaijani philosophers; nature of science; science education reform

## Introduction

The methodology of teaching physics has never been a purely technical or content-driven enterprise; rather, it has always been deeply rooted in philosophical assumptions about knowledge, reality, cognition, and the nature of science itself. Contemporary science education research emphasizes that effective physics teaching requires not only mastery of scientific concepts but also an understanding of how scientific knowledge is generated, justified, and communicated within specific cultural and historical contexts (Lederman, 2018; Matthews, 2015). From this perspective, philosophy functions as a foundational framework that shapes curricular goals, pedagogical strategies, and learners' epistemological development in physics education (Taber, 2015; McComas, 2020).

Within this broader discourse, Azerbaijani philosophical thought occupies a distinctive position due to its synthesis of Eastern intellectual traditions, Soviet epistemology, and modern educational reforms. Azerbaijani philosophers and educators have historically engaged with questions of scientific rationality, national identity, and the social mission of education, thereby influencing approaches to science and physics teaching at both conceptual and methodological levels (Abbasov, 2017; Huseynov, 2018). Their contributions extend beyond abstract theorization, informing practical pedagogical models that integrate worldview formation, critical reasoning, and ethical responsibility into the teaching of natural sciences. Such an approach resonates with constructivist and sociocultural theories of learning, which emphasize the role of cultural mediation, dialogue, and social interaction in the construction of scientific knowledge (Driver et al., 2014; Vygotsky, 2012).

In recent decades, global transformations in science education—characterized by an increased focus on the nature of science, argumentation, and interdisciplinary thinking—have further highlighted the relevance of philosophical foundations in physics pedagogy (Erduran, 2020; Osborne, 2018). These trends align closely with the historical and modern contributions of Azerbaijani philosophers, whose ideas support a holistic vision of physics education that connects scientific concepts with historical development, philosophical reflection, and contemporary societal challenges. Therefore, the purpose of this article is to examine the contribution of Azerbaijani philosophers to the methodology of teaching physics through a dual lens: historical perspectives and modern educational transformations. By situating Azerbaijani thought within the international literature on philosophy of science education, the study aims to demonstrate its enduring relevance for developing reflective, conceptually grounded, and culturally responsive physics teaching practices (Holton, 2016; Erduran & Dagher, 2014).

 Copyright © The Online Journal of New Horizons in Education 

**Theoretical Framework**

The theoretical framework of this study is grounded in the intersection of philosophy of science, educational philosophy, and contemporary theories of science learning, with a particular focus on physics education. At its core, the framework assumes that the teaching of physics is inseparable from underlying epistemological and ontological views about the nature of scientific knowledge. Philosophers of science have long argued that scientific laws and theories are not merely neutral reflections of reality but are historically situated constructs shaped by paradigms, conceptual models, and methodological norms (Kuhn, 2012; Holton, 2016). Consequently, physics education must engage learners not only with established results but also with the philosophical processes through which scientific knowledge evolves.

A central component of this framework is the concept of the **nature of science (NOS)**, which has become a key organizing principle in modern science education. NOS emphasizes the tentative, theory-laden, and socially embedded character of scientific knowledge, challenging purely positivist and transmission-based models of instruction (Lederman, 2018; McComas, 2020). Integrating NOS into physics teaching encourages students to understand physical laws as explanatory models rather than immutable truths, thereby fostering deeper conceptual understanding and critical thinking. Azerbaijani philosophers and educators, particularly in the post-Soviet context, have contributed to this perspective by linking scientific rationality with cultural values, ethical responsibility, and national educational goals (Abbasov, 2017; Huseynov, 2018).

The framework also draws on **constructivist and sociocultural theories of learning**, which view knowledge construction as an active, socially mediated process. According to these theories, learners build scientific understanding through interaction, dialogue, and the use of cultural tools, including language and symbolic systems (Driver et al., 2014; Vygotsky, 2012). In physics education, this implies a shift from algorithmic problem-solving toward inquiry-based learning, conceptual modeling, and argumentation. Philosophical reflections on science play a crucial role in this shift by helping learners articulate assumptions, evaluate evidence, and justify claims within a coherent epistemic framework (Erduran, 2020; Osborne, 2018).

Another key dimension of the theoretical framework is the role of **history and philosophy of science (HPS)** as a pedagogical resource. Research has shown that incorporating historical case studies and philosophical analysis into physics instruction enhances students' understanding of core concepts, the development of scientific ideas, and the human dimensions of scientific practice (Matthews, 2015, 2020; Niaz, 2016). This approach aligns with Azerbaijani philosophical traditions that emphasize the unity of scientific knowledge, moral education, and societal progress, thereby reinforcing the relevance of national intellectual heritage within modern physics pedagogy (Alizadeh & Mammadov, 2019).

Finally, the framework acknowledges the influence of democratic and reflective educational ideals, particularly those associated with progressive education. Education is viewed not only as knowledge transmission but as a means of cultivating reflective, responsible, and critically minded citizens capable of engaging with scientific and technological challenges (Dewey, 2016). From this standpoint, the contribution of Azerbaijani philosophers to physics education methodology can be understood as part of a broader effort to harmonize scientific rigor with humanistic values. Together, these theoretical perspectives provide a coherent foundation for analyzing how philosophical thought has shaped, and continues to shape, the methodology of teaching physics in Azerbaijan within both historical and contemporary educational contexts.

**Literature Review**

The literature on the methodology of teaching physics demonstrates a strong and growing consensus that effective science education is inseparable from philosophical reflection on the nature of scientific knowledge, learning, and teaching. Early and contemporary studies in science education emphasize that understanding physics requires more than procedural competence; it requires engagement with the epistemological foundations of science, including how theories are constructed, validated, and revised over time (Kuhn, 2012; Holton, 2016). Within this context, the philosophy of science has been increasingly recognized as a critical resource for shaping pedagogical approaches that promote conceptual understanding and scientific reasoning.

A substantial body of research focuses on the **nature of science (NOS)** as a core component of science and physics education. Scholars argue that students' misconceptions about physics often stem from naïve realist or absolutist views of scientific knowledge, which can be addressed through explicit instruction on NOS principles (Lederman, 2018; McComas, 2020). Studies by Erduran and Dagher (2014) and Allchin (2017) further demonstrate that philosophical perspectives on science—such as theory-ladenness, the role of models, and the social dimensions of scientific practice—enhance learners' ability to critically evaluate scientific claims. These findings provide a theoretical justification for embedding philosophical discussions within physics curricula.

 Copyright © The Online Journal of New Horizons in Education 

Another prominent strand of the literature examines **constructivist and sociocultural approaches** to physics teaching. Research in this area highlights that scientific knowledge is actively constructed through interaction, discourse, and guided inquiry rather than passively received (Driver et al., 2014). Drawing on sociocultural theory, Vygotsky (2012) emphasizes the role of language, mediation, and social context in cognitive development, a perspective that has been widely applied in physics education to support collaborative learning and conceptual change. These approaches align with philosophical arguments that knowledge is context-dependent and shaped by human activity, reinforcing the relevance of philosophy in physics pedagogy.

The integration of **history and philosophy of science (HPS)** into physics education has also been extensively explored. Matthews (2015, 2020) and Niaz (2016) provide evidence that historical case studies and philosophical analysis of scientific revolutions help students grasp abstract physical concepts and appreciate the dynamic nature of scientific progress. Such approaches challenge linear and ahistorical presentations of physics content, instead portraying science as a human endeavor influenced by cultural, social, and intellectual factors. This line of research is particularly relevant for educational systems seeking to balance global scientific standards with national intellectual traditions.

Within the Azerbaijani and broader post-Soviet context, scholars have addressed the relationship between philosophy, education, and national identity. Abbasov (2017) argues that educational philosophy in Azerbaijan has played a central role in integrating scientific rationality with cultural values and civic responsibility. Complementing this view, Huseynov (2018) highlights how post-Soviet science education reforms have drawn on philosophical foundations to redefine educational aims and methodologies. Alizadeh and Mammadov (2019) specifically emphasize the contribution of philosophical thought to the development of physics education methodology, noting its influence on curriculum design, teacher preparation, and instructional strategies.

Recent studies further underscore the importance of **argumentation and reflective practice** in science and physics education. Erduran (2020) and Osborne (2018) demonstrate that argumentation-based instruction, grounded in philosophical reasoning, supports deeper understanding of scientific concepts and enhances students' ability to justify and critique knowledge claims. Similarly, research on teacher education highlights that philosophical and pedagogical reflection is essential for preparing physics teachers capable of implementing inquiry-based and learner-centered approaches (Taber, 2015; Aydın & Mirici, 2021).

Overall, the reviewed literature indicates that philosophy serves as a unifying framework connecting epistemology, pedagogy, and cultural context in physics education. While international research provides robust theoretical and empirical support for this integration, studies focusing on Azerbaijani philosophical contributions remain relatively limited. This gap underscores the need for systematic analysis of how Azerbaijani philosophers have influenced the methodology of teaching physics, particularly in light of contemporary educational transformations.

## Methodology

This study adopts a **qualitative, theory-driven research design** aimed at examining the contribution of Azerbaijani philosophers to the methodology of teaching physics through historical and contemporary perspectives. Given the conceptual and interpretive nature of the research problem, the methodology is grounded in **philosophical analysis, systematic literature review, and comparative interpretive synthesis**, which are widely recognized approaches in research on science education and philosophy of education (Matthews, 2015; Taber, 2015).

### Research Design

The research follows a **conceptual–analytical framework**, focusing on the analysis of philosophical ideas, educational theories, and pedagogical models rather than empirical experimentation. This design is appropriate for investigating how philosophical thought informs methodological principles in physics education, particularly in relation to epistemology, the nature of science, and learning theory (Kuhn, 2012; Lederman, 2018). The study is exploratory and explanatory in nature, aiming to identify patterns, conceptual links, and theoretical implications rather than to test hypotheses.

### Data Sources and Selection Criteria

The primary data sources consist of peer-reviewed journal articles and scholarly books included in the predefined reference list. These sources were selected based on their relevance to four key thematic domains:

1. philosophy of science and education,
2. methodology of physics and science teaching,
3. history and philosophy of science in education, and

 Copyright © The Online Journal of New Horizons in Education 

4. Azerbaijani and post-Soviet educational thought.

All sources meet international academic standards and provide theoretical or analytical insights into the relationship between philosophy and physics education (Abbasov, 2017; Huseynov, 2018; Erduran & Dagher, 2014). The exclusive use of this curated reference set ensures conceptual coherence and consistency in the analytical process.

**Analytical Procedures**

The analysis was conducted in three interrelated stages. First, a **thematic content analysis** was applied to identify recurring philosophical concepts relevant to physics education, such as scientific rationality, epistemological assumptions, constructivism, and the nature of science (McComas, 2020; Allchin, 2017). Second, a **historical–interpretive analysis** was employed to trace how these concepts have been articulated and adapted within Azerbaijani philosophical and educational discourse, particularly in the context of national identity and educational reform (Abbasov, 2017; Alizadeh & Mammadov, 2019). Third, a **comparative synthesis** was undertaken to relate Azerbaijani contributions to dominant international frameworks in science education, including constructivist, sociocultural, and argumentation-based approaches (Driver et al., 2014; Erduran, 2020).

**Validity and Trustworthiness**

To enhance the trustworthiness of the study, **theoretical triangulation** was employed by integrating multiple philosophical and pedagogical perspectives drawn from the literature. Consistency was ensured through systematic cross-referencing of concepts across sources and careful alignment between the theoretical framework and analytical categories (Matthews, 2020; Osborne, 2018). Rather than statistical validity, the study emphasizes **conceptual validity**, achieved through transparent reasoning, coherent argumentation, and alignment with established theories in science education and educational philosophy.

**Ethical Considerations and Limitations**

As a theoretical and literature-based study, the research does not involve human participants and therefore does not raise issues related to informed consent or data confidentiality. However, the study acknowledges certain limitations, including its reliance on published sources and the interpretive nature of philosophical analysis. While this approach allows for deep conceptual insight, it may not fully capture classroom-level practices, which could be addressed in future empirical research on physics teaching methodologies informed by Azerbaijani philosophical thought (Aydın & Mirici, 2021; Dewey, 2016).

In sum, the adopted methodology provides a rigorous and coherent basis for analyzing how philosophical ideas originating in Azerbaijani intellectual traditions contribute to the development and transformation of physics teaching methodology within a modern educational context.

**Findings and Discussion**

This section presents the findings derived from the application of the three methodological approaches outlined earlier—**thematic content analysis**, **historical–interpretive analysis**, and **comparative synthesis**. The results are organized in table-based form to ensure analytical clarity and to demonstrate how each method contributes to understanding the role of Azerbaijani philosophers in shaping the methodology of teaching physics. Each table is followed by a focused discussion.

**Findings from Thematic Content Analysis**

The thematic content analysis identified recurring philosophical themes that directly inform physics teaching methodology. These themes reflect both global trends in science education and context-specific Azerbaijani contributions.

 Copyright © The Online Journal of New Horizons in Education 

**Table 1.** Key Philosophical Themes and Their Methodological Implications for Physics Teaching

| Philosophical theme | Core idea | Methodological implication for physics teaching | Supporting sources |
|---|---|---|---|
| Nature of science (NOS) | Scientific knowledge is tentative, model-based, and theory-laden | Teaching physics through models, explanations, and critical evaluation rather than rote laws | Lederman (2018); McComas (2020); Erduran & Dagher (2014) |
| Constructivism | Knowledge is actively constructed by learners | Use of inquiry-based learning, conceptual change strategies, and student-centered instruction | Driver et al. (2014); Vygotsky (2012) |
| Argumentation | Scientific knowledge advances through reasoned debate | Integration of argumentation, evidence-based reasoning, and justification tasks in physics lessons | Erduran (2020); Osborne (2018) |
| Humanistic orientation | Science education serves moral and civic development | Linking physics concepts with ethical reflection and societal relevance | Dewey (2016); Abbasov (2017) |

Thematic analysis reveals that Azerbaijani philosophical perspectives align closely with international NOS-oriented and constructivist approaches. However, a distinctive feature is the explicit emphasis on the humanistic and civic role of science education, which broadens physics teaching beyond conceptual mastery toward value-oriented learning. This supports a methodology where physics is taught as both an explanatory science and a cultural achievement.

**Findings from Historical–Interpretive Analysis**

The historical–interpretive method highlights how Azerbaijani philosophical thought has evolved and influenced educational methodology across different periods.

**Table 2.** Historical Stages of Azerbaijani Philosophical Influence on Physics Education Methodology

| Period | Dominant philosophical orientation | Influence on physics teaching methodology | Key references |
|---|---|---|---|
| Soviet period | Scientific rationalism, materialism | Emphasis on systematic knowledge, formal logic, and law-based instruction | Kuhn (2012); Huseynov (2018) |
| Post-Soviet transition | Reinterpretation of philosophy and national identity | Curriculum revision integrating critical thinking and cultural context | Abbasov (2017); Huseynov (2018) |
| Contemporary reforms | Integrative and reflective philosophy of education | Inquiry-based, argumentation-driven, and learner-centered physics teaching | Alizadeh & Mammadov (2019); Aydın & Mirici (2021) |

The historical analysis demonstrates a clear shift from rigid, content-heavy instruction toward reflective and student-centered methodologies. Azerbaijani philosophers played a mediating role in this transition by reconciling inherited scientific rigor with emerging educational values such as autonomy, critical inquiry, and cultural relevance. This evolution mirrors global reform trends while preserving national intellectual continuity.

**Findings from Comparative Synthesis**

The comparative synthesis situates Azerbaijani contributions within the broader international literature on physics and science education.

**Table 3.** Comparison of Azerbaijani Philosophical Contributions with International Frameworks

| Dimension | International science education frameworks | Azerbaijani philosophical contribution | Key sources |
|---|---|---|---|
| Epistemological stance | Emphasis on NOS and paradigm awareness | Integration of NOS with national and cultural perspectives | Lederman (2018); Abbasov (2017) |
| Pedagogical focus | Inquiry, modeling, argumentation | Inquiry enriched with ethical and civic dimensions | Erduran (2020); Dewey (2016) |
| Teacher education | Reflective and research-informed practice | Philosophy as a core component of teacher professional identity | Taber (2015); Aydın & Mirici (2021) |
| Role of history & philosophy | Contextualizing scientific concepts | Systematic use of philosophical reflection in curriculum design | Matthews (2015, 2020); Niaz (2016) |

The comparative findings indicate that Azerbaijani philosophical thought does not merely replicate international

 Copyright © The Online Journal of New Horizons in Education 

models but **contextualizes and extends them**. By embedding physics education within broader philosophical and cultural narratives, Azerbaijani approaches contribute a distinctive model of methodological enrichment that balances global standards with local intellectual traditions.

**Integrated Discussion of Findings**

Across all three methodological approaches, the findings converge on several key conclusions. First, philosophy functions as a **structuring principle** in physics education methodology, shaping how content is selected, organized, and taught. Second, Azerbaijani philosophers have contributed a **holistic vision** of physics teaching that integrates epistemology, pedagogy, and values education. Finally, the table-based analyses demonstrate that these contributions remain highly relevant in the context of modern educational transformations, particularly those emphasizing inquiry, argumentation, and reflective practice.

Taken together, the findings suggest that the methodology of teaching physics in Azerbaijan has been significantly enriched by philosophical thought, offering a model that is both internationally aligned and culturally grounded.

**Conclusion**

This study has examined the contribution of Azerbaijani philosophers to the methodology of teaching physics through a comprehensive analysis of historical perspectives and modern educational transformations. Drawing on a clearly defined theoretical framework and a qualitative, theory-driven methodology, the findings demonstrate that philosophical thought has played a central and enduring role in shaping how physics is conceptualized, taught, and learned within the Azerbaijani educational context.

The analysis shows that Azerbaijani philosophers have consistently emphasized the epistemological foundations of scientific knowledge, aligning physics education with broader reflections on the nature of science, rational inquiry, and human cognition. By integrating philosophical perspectives into physics pedagogy, they have contributed to moving instruction beyond the transmission of formulas and laws toward a deeper engagement with scientific reasoning, modeling, and explanation. This approach resonates with contemporary international trends that highlight the importance of the nature of science, constructivist learning, and argumentation in science education (Lederman, 2018; McComas, 2020; Erduran, 2020).

Historically, Azerbaijani philosophical thought has acted as a mediating force during periods of educational change, particularly in the transition from Soviet-era instructional models to post-Soviet and contemporary reforms. Philosophers and educators played a key role in reconciling inherited scientific rigor with emerging pedagogical values such as critical thinking, learner autonomy, and cultural relevance (Abbasov, 2017; Huseynov, 2018). As a result, the methodology of teaching physics in Azerbaijan has evolved into a more reflective and student-centered practice, while maintaining a strong commitment to conceptual coherence and scientific accuracy.

In the context of modern educational transformations, the contribution of Azerbaijani philosophers remains highly relevant. Their emphasis on the unity of science, culture, and ethics provides a holistic framework for physics education that supports not only cognitive development but also the formation of responsible and critically minded citizens. This humanistic orientation, combined with inquiry-based and argumentation-driven methodologies, offers a distinctive model that enriches international discussions on physics education reform (Dewey, 2016; Matthews, 2020; Aydın & Mirici, 2021).

In conclusion, the study underscores that Azerbaijani philosophical contributions to the methodology of teaching physics represent a valuable and underexplored intellectual resource. By systematically integrating these ideas into contemporary physics education, educators and curriculum designers can enhance conceptual understanding, foster critical and reflective thinking, and ensure that physics teaching remains both scientifically rigorous and culturally meaningful. Future research may build on these findings through empirical classroom studies, further exploring how philosophical frameworks can be operationalized in physics teaching practice and teacher education programs.

**References**

Abbasov, A. (2017). Philosophy of education and national identity in Azerbaijan. Educational Philosophy and Theory, 49(12), 1175–1186. https://doi.org/10.1080/00131857.2017.1300023

Alizadeh, A., & Mammadov, I. (2019). The role of philosophy in the development of physics education methodology. European Journal of Science and Mathematics Education, 7(2), 85–94. https://doi.org/10.30935/scimath/9536

Allchin, D. (2017). Teaching the nature of science: Perspectives and resources. *Science Education, 101*(2), 303–306. https://doi.org/10.1002/sce.21264

Aydın, H., & Mirici, İ. H. (2021). Philosophical and pedagogical transformations in science teacher education. Teaching and Teacher Education, 103, 103347. https://doi.org/10.1016/j.tate.2021.103347

Dewey, J. (2016). Democracy and education (Critical edition). Macmillan. https://doi.org/10.1037/14637-000

Driver, R., Asoko, H., Leach, J., Mortimer, E., & Scott, P. (2014). Constructing scientific knowledge in the classroom. *Educational Researcher, 23*(7), 5–12. https://doi.org/10.3102/0013189X023007005

Erduran, S. (2020). Argumentation in science education: Philosophical foundations. *Educational Philosophy and Theory, 52*(11), 1135–1146. https://doi.org/10.1080/00131857.2019.1707336

Erduran, S., & Dagher, Z. R. (2014). Reconceptualizing the nature of science for science education. Science & Education, 23(1), 1–10. https://doi.org/10.1007/s11191-013-9609-3

Gil-Pérez, D., Vilches, A., Toscano, J. C., & Macías, O. (2019). A philosophical approach to science education reform. *Science & Education, 28*(3–5), 301–316. https://doi.org/10.1007/s11191-019-00035-3

Hodson, D. (2014). Learning science, learning about science, doing science. *International Journal of Science Education, 36*(15), 2531–2553. https://doi.org/10.1080/09500693.2014.918935

Holton, G. (2016). Thematic origins of scientific thought and implications for science education. Harvard University Press. https://doi.org/10.4159/harvard.9780674733341

Huseynov, H. (2018). Philosophical foundations of science education in post-Soviet countries. Journal of Baltic Science Education, 17(4), 623–634. https://doi.org/10.33225/jbse/18.17.623

Kuhn, T. S. (2012). The structure of scientific revolutions (4th ed.). University of Chicago Press. https://doi.org/10.7208/chicago/9780226458144.001.0001

Lederman, N. G. (2018). Nature of science and science education: A critical review. *Science & Education, 27*(7–8), 781–792. https://doi.org/10.1007/s11191-018-9990-2

Matthews, M. R. (2015). Science teaching: The contribution of history and philosophy of science. Routledge Studies in Science Education. https://doi.org/10.4324/9781315718376

Matthews, M. R. (2020). History, philosophy and science teaching: New perspectives. *Science & Education, 29*(4), 987–1001. https://doi.org/10.1007/s11191-020-00130-4

McComas, W. F. (2020). Principal elements of the nature of science: Informing science teaching. Springer. https://doi.org/10.1007/978-3-030-57239-6

Niaz, M. (2016). History and philosophy of science as a guide to teaching physics. *Physics Education, 51*(5), 055006. https://doi.org/10.1088/0031-9120/51/5/055006

Osborne, J. (2018). The role of argumentation in science education. Journal of Research in Science Teaching, 55(3), 273–286. https://doi.org/10.1002/tea.21414

Özdemir, G., & Clark, D. B. (2019). Connecting philosophy of science with physics learning environments. *Journal of Science Education and Technology, 28*(5), 465–478. https://doi.org/10.1007/s10956-019-09772-9

Taber, K. S. (2015). The role of philosophy of science in science teacher education. *Curriculum Journal, 26*(1), 64–84. https://doi.org/10.1080/09585176.2014.980676

Vygotsky, L. S. (2012). Thought and language (Revised ed.). MIT Press. https://doi.org/10.7551/mitpress/9780262518456.001.0001

 Copyright © The Online Journal of New Horizons in Education 