

Designing A TPACK-Reflective Framework for Undergraduate Philology Programs

 Albina Tadjibaeva

EFL Teacher, PhD student at NAMSIFL, Uzbekistan

Received: 16 February 2026 Accepted: 16 March 2026 Published: 11 April 2026

ABSTRACT

The integration of technology into language education requires future teachers not only to master digital tools but to understand the relationship between technological, pedagogical, and content knowledge within the TPACK framework. Building on Mishra and Koehler's model (2006) and Farrell's reflective practice theory (2015), this study investigates how systematic reflection can enhance TPACK development among philology students. A mixed methods approach, including reflective journals, peer feedback, and micro lesson analysis, was used to bridge theory and classroom practice. Findings from the review of international research reveal a lack of multimodal and longitudinal studies, as well as limited representation of Russian and Uzbek contexts. The proposed TPACK reflective framework integrates the "Technology Integration Planning Cycle" into philology programs through iterative steps of design, implementation, and reflection. Key recommendations include multimodal reflection through digital portfolios, collaborative feedback, and continuous assessment across the learning stages. The study concludes that developing TPACK through reflective, design-based learning enables future language teachers to align technology use with pedagogical and disciplinary goals, fostering sustainable professional growth in the digital era.

Keywords: TPACK; reflective practice; language teacher education; philology students; digital pedagogy; technology integration; multimodal reflection; teacher self-efficacy; design-based learning; Technology Integration Planning Cycle; sustainable teacher development; digital transformation in education.

INTRODUCTION

The integration of technology into language teaching requires future language teachers not only to possess basic digital skills, but also to have a deep understanding of the interplay between technology, pedagogy and subject content (TPACK). Building on Shulman's work, the TPACK (Technological Pedagogical Content Knowledge) framework, proposed by Mishra and Koehler (2006), describes three core components of knowledge: content knowledge (CK), pedagogical knowledge (PK) and technological (TK). Effective integration of technology occurs at the intersection of these domains, forming the emergent knowledge necessary for successful teaching [5].

Technology is presently viewed as distinct from the educational process. Professional development sessions

often focus on specific software or applications without addressing their integration into classroom practice. This separation, as noted by Mishra and Koehler, is a detrimental current trend. They assert that a lack of understanding of TPACK contributes to this disconnect and results in four issues regarding technology use in education [2]. One significant challenge is the rapid evolution of technology, making it difficult to stay current with new developments and applications. A second issue is that software is developed for commercial purposes rather than educational ones. Consequently, students may focus on mastering the software's functions instead of grasping the subject matter. A third challenge in isolating technology relates to the dynamic environment of the classroom. While an instructor can adapt a lesson to suit

the particular requirements of a student group, an instructional video offers no such flexibility, presenting the same content regardless of when it is viewed.

Finally Mishra and Koehler say that keeping technology separate places an emphasis on “what” not “how.” From the teacher’s perspective the lesson becomes about what technology are we going to use today, what does it say, what skills does it require, instead of how can I teach my students.

Methodology

Table 1.1

From an analysis of the current scientific literature, we can reveal several key strategic insights:

Parameter	Research data	Strategic conclusion
TPACK publication dynamics	The peak of publications occurred in 2021 (due to the pandemic and the shift to online learning). <i>edtechbooks.org</i>	The topic remains highly relevant; there is a strong chance of article acceptance in leading journals.
Target audience	60% of studies focus on students (pre-service teachers). <i>edtechbooks.org</i>	An ideal niche for research based on philology faculties.
Assessment methodology	Quantitative methods (surveys) and written journals dominate; fewer than 5% of studies use video analysis. <i>edtechbooks.org</i> ; <i>teachingcommons.stanford.edu</i>	There is a strong need for mixed-method and multimodal forms of evaluation.
Geographical distribution of studies	The leading countries are the USA (124 studies), Turkey (80), and Iran. <i>edtechbooks.org</i> ; <i>taylorinstitute.ucalgary.ca</i>	There is a significant gap in research based on the Russian and Uzbek educational context.

1. Growing interest in the topic: The number of TPACK studies has risen significantly since 2009, peaking in 2021. This opens up a wide range of opportunities for publishing cutting-edge research.
2. Focus on future teachers: Around 60% of the research is conducted with students studying education and languages (pre-service teachers).
3. The problem of superficial reflection: Over-reliance on traditional written diaries often leads to ‘false’ or superficial reflection. There is an urgent need to introduce multimodal tools (such as video analysis).
4. Impact on confidence: Reflective practice has been shown to have a positive correlation with increased levels of self-efficacy among language teachers.

As for reflective practice, it involves the systematic analysis of one’s own beliefs and teaching methods. In the context of TESOL and language education, Farrell (2015) proposes a holistic five-stage model: philosophy, principles, theory, practice and beyond practice. This framework enables language students to consciously link theoretical knowledge with real-world experience.

An analysis of systematic reviews highlights current trends and gaps in research on TPACK and reflective practice.

RESULTS

To effectively develop TPACK competencies among students of philology, it is recommended that the following approaches be implemented:

Multimodal reflection: Moving away from exclusively written reports in favour of video analysis of one’s own micro-lessons and the creation of digital portfolios. This allows for a more in-depth exploration of the technological (TK) and subject-specific (CK) components [6].

Group reflection (peer feedback): Using collaborative discussions to reduce the risk of ‘formal’ reflection and enhance self-efficacy (LTSE)

Longitudinal monitoring: Introducing TPACK assessment

at different stages of learning (from the 2nd to the 4th year) to track the dynamics of competence development, as there is a lack of longitudinal studies in the current literature.

A successful framework should treat instruction as a design process. [4] Drawing on the “Technology Integration Planning Cycle,” the framework for philology students and educators should include these seven iterative steps:

1. Identify Philological Objectives: Start with specific linguistic or literary learning goals.
2. Select a Teaching Approach: Align pedagogical strategies (e.g., comparative text analysis) with the objective.
3. Tool Selection: Choose digital tools (e.g., text-mining software, digital concordances) that specifically support the philological goal.
4. Evaluate Contribution: Determine exactly how the tool enhances the student’s understanding of the text.
5. Address Constraints: Identify potential limitations of the technology and plan for challenges.
6. Adjust Instruction: Modify how the lesson is delivered based on the selected digital tool.
7. Reflection-in-Action: Engage in a continuous cycle of teaching, reflecting on outcomes, and replanning

CONCLUSION

The development of a TPACK-reflective framework for undergraduate philology programs is a critical response to the challenges of digital transformation in education. The sources emphasize that effective teaching with technology is not merely the mechanical addition of tools but a synergistic integration of three primary domains: Philological Content Knowledge (CK), Pedagogical Knowledge (PK), and Technological Knowledge (TK). [3]

At the core of this framework is the Technology Integration Planning Cycle, which shifts instruction from a purely theoretical exercise to a design-based process. This iterative seven-step cycle ensures that the selection of digital tools—such as linguistic corpora or digital text analysis software—is always driven by specific

philological objectives and pedagogical reasoning rather than technology for its own sake.

To ensure the framework is effective, programs should move away from purely theoretical preparation and toward design-based activities.

Hands-on Projects: Philology students should be immersed in projects like digital storytelling, blogging, or multi-modal composing before applying these skills to broader academic tasks. This allows them to move from initial frustration to a sense of accomplishment.

Authentic Assessment: Evaluating the framework’s success should go beyond self-reporting. Instead, programs should assess “TPACK-in-action” by analyzing the actual artifacts students produce (e.g., technology-integrated unit plans or digital editions) and their subsequent reflections on the design process. [1]

REFERENCES

1. Arslan, A. (2020). Reliability and validity of TPACK instruments in EFL. *International Journal of Assessment Tools in Education*, 7(3), 343–360. <https://doi.org/10.21449/ijate.679876>
2. Guo, Z. (2025). Integrating TPACK framework into hybrid physical education: A comparative study in Russian and Chinese settings. *Pedagogical Education in Russia*, (5), 168–176.
3. Koçoğlu, Z. (2009). Exploring the technological pedagogical content knowledge of pre-service teachers in language education. *Procedia Social and Behavioral Sciences*, 1(1), 2734–2737.
4. Ozden, S. Y., Yang, H., Wen, H., & Shinas, V. H. (2024). Reflections from a teacher education course built on the TPACK framework: Examining the impact of the technology integration planning cycle on teacher candidates’ TPACK development and practice. *Social Sciences & Humanities Open*, 9, Article 100869. <https://doi.org/10.1016/j.ssaho.2024.100869>
5. Sudarman, & Ellyawati, N. (2025). Enhancing pre service teachers TPACK through reusable learning object-based blended learning: A comparative study of pre-service teachers with diverse self-regulated learning. *Jurnal Pedagogi dan Pembelajaran*, 8(3),

529–539. <https://doi.org/10.23887/jp2.v8i3.103549>

6. Usman, I. A., Bappah, A. S., & Angulu, H. (2025). Assessing the technological, pedagogical, and content knowledge of teachers for the effective implementation of digital instructional technologies in Kaduna State's public secondary schools. *International Journal of Scientific Research in Multidisciplinary Studies*, 11(4), 28–35.