

METHODOLOGICAL MODEL AND DIAGNOSTIC CRITERIA FOR DEVELOPING SCHOOL TEACHERS' PEDAGOGICAL TOLERANCE COMPETENCIES UNDER DIGITALIZATION OF EDUCATION

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ARTICLE INFORMATION

ABSTRACT:

ARTICLE HISTORY:

Received: 22.05.2026

Revised: 23.05.2026

Accepted: 24.05.2026

KEYWORDS:

pedagogical
tolerance, teacher
competence, digital
education,
methodological model,
diagnostic criteria,
digital ethics, media
literacy, conflict
prevention.

The digitalization of education changes the professional content of pedagogical tolerance because teacher-learner interaction increasingly occurs through learning management systems, electronic assessment tools, messaging platforms, video conferencing environments and algorithmically mediated information flows. In this context, tolerance cannot be reduced to general benevolence or passive acceptance of differences. It becomes an integrated professional competence that combines ethical digital communication, respect for learner diversity, conflict-sensitive online interaction, media literacy, reflective regulation and inclusive instructional decision-making. The purpose of this article is to substantiate a methodological model and a diagnostic framework for developing school teachers' pedagogical tolerance competencies in digitally mediated education. The study is based on theoretical modelling, competence-based analysis, structural-functional interpretation and diagnostic design. The proposed model contains target, conceptual, content, process-technological, organizational-pedagogical, diagnostic and result blocks. The diagnostic system includes four criteria: cognitive, value-motivational,

communicative-behavioural and reflective-regulatory. Each criterion is operationalized through indicators that can be assessed by questionnaires, observation protocols, analysis of digital communication, reflective tasks and case-based performance assignments. The article argues that digital tools produce an educational effect only when they are integrated into a humanistic pedagogical logic. The model can be used in professional development courses, school-based methodological work and empirical studies aimed at increasing teachers' readiness to create tolerant, safe and dialogic digital learning environments.

Introduction

Digitalization has become a structural condition of contemporary schooling rather than an auxiliary technological addition to classroom practice. Teachers organize learning through electronic journals, digital platforms, online assignments, video lessons, cloud documents, social communication channels and automated feedback tools. These instruments expand access to educational resources, but they also transform the communicative ecology of schooling. The teacher's message can be stored, copied, interpreted outside the original context and discussed by learners or parents without the immediate emotional cues that normally accompany face-to-face interaction. As a result, professional pedagogical tolerance acquires a more complex functional meaning.

Pedagogical tolerance in school education traditionally refers to respect for learner individuality, recognition of cultural and social diversity, acceptance of different viewpoints and the ability to prevent humiliating or discriminatory interaction. Under digitalization, these meanings remain relevant, yet they are insufficient unless they are connected with digital ethics, media literacy, online conflict prevention and reflective control over written pedagogical communication. In an online or blended classroom, the teacher's tolerance is tested through concrete micro-decisions: how to respond to a learner's delayed task, how to interpret silence in a video lesson, how to moderate disagreement in a forum, how to prevent stigmatizing comments in a group chat and how to balance fairness with empathy during digital assessment.

The theoretical basis of the present article draws on competence-based pedagogy, humanistic education, digital competence frameworks and studies of innovative pedagogical technologies. UNESCO's Declaration of Principles on Tolerance defines tolerance as respect, acceptance and appreciation of diversity, while the UNESCO ICT Competency Framework for Teachers and the European DigCompEdu framework emphasize that a digitally competent teacher should be able to use technologies responsibly for teaching, communication, assessment and learner empowerment. Uzbek pedagogical scholarship also provides important methodological foundations. Azizxo'jayeva interprets pedagogical mastery as the unity of technological design and human-oriented communication. Tolipov and Usmonboyeva stress the practical implementation of pedagogical technologies through purposeful organization of learning activities. Muslimov and co-authors connect professional competence with innovation, creativity and reflexive readiness for pedagogical action.

Despite the growing number of studies on digital competence and teacher professionalism, the issue of pedagogical tolerance in digitally mediated school interaction remains insufficiently systematized. Many professional development programmes treat digital literacy and educational ethics as separate modules. However, teachers face situations where digital knowledge, moral responsibility, communicative tact and conflict-sensitive decision-making operate simultaneously. Therefore, a methodological model is required to integrate these dimensions into a coherent developmental process. Diagnostic criteria are also needed because the development of tolerance competence cannot be managed effectively without observable indicators and levels.

The research problem can be formulated as follows: what methodological structure and diagnostic criteria can support the development of school teachers' pedagogical tolerance competencies under conditions of educational digitalization? The purpose of the article is to develop and substantiate a model that connects theoretical principles, pedagogical conditions, digital tools, competence components and diagnostic procedures. The research tasks are to clarify the structure of pedagogical tolerance competence in digital education, to design the blocks of the methodological model, to specify diagnostic criteria and indicators and to determine how the model can be applied in teacher professional development.

Materials and methods

The article uses a theoretical and methodological research design. No experimental dataset is reported, because the main aim is to construct a model and a diagnostic framework that may subsequently be tested in school-based empirical research. The material for analysis consists of pedagogical literature on teacher competence, innovative educational

technologies, digital learning, tolerance education, digital ethics and media literacy. Normative and conceptual sources were used to determine the broader educational requirements for digital teacher competence, while Uzbek pedagogical works were used to contextualize the model within the national tradition of teacher training and methodological improvement.

The competence-based approach was used to interpret pedagogical tolerance not as a single personal trait, but as a professional capacity that includes knowledge, values, communicative behaviour and reflective regulation. The axiological approach made it possible to define the value core of the competence: respect for learner dignity, educational justice, openness to difference, responsibility in communication and rejection of discriminatory practices. The activity-based approach was applied to describe tolerance as a set of observable pedagogical actions performed in concrete classroom and digital situations. The structural-functional approach was used to design the internal organization of the model and to link each block with a specific pedagogical function.

The procedure of model construction consisted of five stages. First, the conceptual field of pedagogical tolerance was delimited in relation to teacher professionalism and digital education. Second, the competence was decomposed into four components: cognitive, value-motivational, communicative-behavioural and reflective-regulatory. Third, a methodological model was designed by aligning aims, principles, content, technologies, organizational conditions and expected outcomes. Fourth, diagnostic criteria and indicators were formulated for each component. Fifth, the possible assessment tools were matched with the indicators in order to make the framework applicable for future empirical verification.

The proposed diagnostic framework follows the principle of triangulation. Pedagogical tolerance cannot be reliably assessed only through self-report questionnaires, because socially desirable responses may distort the results. Therefore, the framework combines questionnaires, observation, case analysis, digital communication analysis, reflective essays, peer feedback and expert evaluation. Such a combination allows the researcher or school methodologist to compare declared attitudes with actual communicative choices and professional behaviour.

Results

The central result of the study is a methodological model for developing school teachers' pedagogical tolerance competencies in digital education. The model is not limited to the use of electronic tools. It describes a pedagogically managed process in which digital resources are subordinated to ethical, communicative and developmental aims. The model consists of

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seven interrelated blocks: target, conceptual, content, process-technological, organizational-pedagogical, diagnostic and result blocks.

The target block defines the general aim: to develop teachers' readiness to create a tolerant, inclusive and conflict-sensitive digital learning environment. This aim is specified through the following outcomes: knowledge of tolerance and digital ethics, internal acceptance of learner diversity, ability to conduct respectful digital communication, readiness to prevent and resolve pedagogical conflicts and capacity for reflective regulation of professional behaviour. The conceptual block integrates competence-based, axiological, activity-based, communicative and reflective approaches. The content block includes theoretical knowledge, digital ethics, media literacy, tolerant pedagogical communication, prevention of digital conflicts and inclusive assessment practices.

The process-technological block determines how the competence is formed. It includes digital cases, online discussions, simulation tasks, analysis of teacher-learner chat fragments, reflective digital diaries, peer moderation exercises, conflict-prevention protocols and microteaching with feedback. The organizational-pedagogical block specifies the conditions necessary for sustainable development: school leadership support, methodological seminars, collegial reflection, ethical rules for online communication, cooperation with parents, access to digital tools and a psychologically safe professional learning environment. The diagnostic block provides criteria, indicators, tools and levels. The result block describes the expected level of competence as high, medium or low.

Table 1. Structural logic of the methodological model

Model block	Pedagogical function	Core content	Expected developmental effect
Target block	Defines the final orientation of competence development	Tolerant digital communication, ethical responsibility, conflict prevention	Clear professional trajectory for teacher development
Conceptual block	Provides theoretical foundations	Competence-based, axiological, activity-based, communicative and	Integrity between values, knowledge and action

		reflective approaches	
Content block	Specifies learning material for teacher training	Digital ethics, media literacy, diversity-sensitive pedagogy, inclusive assessment	Systematic enrichment of professional knowledge and values
Process-technological block	Organizes practical formation of competence	Digital cases, simulations, online discussions, reflective diaries, microteaching	Transfer of tolerant principles into real pedagogical behaviour
Organizational-pedagogical block	Creates conditions for sustainable implementation	School regulations, methodological support, collegial feedback, parent communication protocols	Stability of tolerant interaction at school level
Diagnostic block	Measures the dynamics of competence	Criteria, indicators, tools and levels	Evidence-based monitoring and correction
Result block	Defines achieved developmental status	High, medium and low levels	Differentiated professional development planning

The diagnostic framework operationalizes the competence through four criteria. The cognitive criterion refers to knowledge of pedagogical tolerance, digital ethics, age-related learner characteristics, media literacy and the legal-ethical foundations of communication. The value-motivational criterion reflects the teacher's stable orientation toward respect, educational justice, empathy and acceptance of diversity. The communicative-behavioural criterion describes practical actions: respectful feedback, conflict-sensitive moderation, non-discriminatory language, balanced assessment and constructive response to disagreement. The reflective-regulatory criterion expresses the teacher's ability to analyze personal

reactions, revise communicative decisions, interpret digital traces and plan professional self-improvement.

The criteria are not isolated. A teacher may know the terminology of tolerance but fail to demonstrate it in a stressful digital interaction. Conversely, a teacher may show benevolent attitudes but lack media literacy or conflict-prevention strategies. For this reason, the diagnostic system evaluates competence as an integral unity.

Table 2. Diagnostic criteria and indicators of pedagogical tolerance competence

Criterion	Indicators	Recommended tools	Evidence of development
Cognitive	Knowledge of tolerance concepts, digital etiquette, media literacy, inclusive communication and age-related learner needs	Knowledge test, structured interview, analysis of professional situations	Teacher explains tolerant behaviour and selects ethically justified digital decisions
Value-motivational	Respect for learner dignity, fairness, empathy, openness to difference and motivation to prevent discrimination	Questionnaire, value-orientation task, expert interview	Teacher demonstrates stable readiness to support learners regardless of differences
Communicative-behavioural	Respectful feedback, constructive moderation, non-aggressive written communication and conflict-sensitive classroom management	Observation protocol, analysis of platform messages, role-play, case task	Teacher uses language that reduces tension and supports educational dialogue

Reflective-regulatory	Self-analysis of digital communication, correction of pedagogical decisions, interpretation of conflict causes and planning of improvement	Reflective diary, portfolio, peer review, supervision session	Teacher identifies professional errors and modifies interaction strategies
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The high level is characterized by theoretically grounded understanding, stable humanistic values, consistent respectful communication across face-to-face and digital contexts and independent reflective correction of professional behaviour. At this level, the teacher not only avoids intolerant reactions but also designs learning situations that teach learners to respect diversity and resolve disagreement through argumentation.

The medium level is characterized by correct general understanding and mostly constructive behaviour, but the teacher may experience difficulties in emotionally tense digital interactions, rapid online discussions or conflicts involving parents. Reflection is present, yet it often requires external methodological support. The teacher can apply tolerant communication techniques when clear instructions and examples are provided.

The low level is characterized by fragmentary knowledge, unstable value orientation, episodic use of respectful communication and limited ability to analyze digital conflicts. At this level, the teacher may interpret learner differences as disciplinary problems, use evaluative or categorical wording in electronic messages and avoid reflective analysis of communication failures. Professional development should begin with ethical awareness, basic media literacy and supervised case work.

Discussion

The proposed model confirms that digitalization should not be interpreted as a purely technological process. Its pedagogical quality depends on the values and competencies that regulate teacher behaviour. A school may introduce modern platforms and still reproduce intolerance through humiliating feedback, unequal attention to learners, culturally insensitive examples or uncontrolled online conflicts. Therefore, the development of pedagogical tolerance competence must be included in digital transformation strategies at the level of teacher training, school methodology and educational leadership.

The model differs from general digital competence frameworks because it focuses on the ethical and communicative consequences of technology-mediated interaction. DigCompEdu describes professional engagement, digital resources, teaching and learning, assessment, learner empowerment and facilitation of learners' digital competence. The present model complements this logic by specifying how these domains can be connected with tolerance. For example, learner empowerment becomes pedagogically meaningful only when the teacher ensures safe participation, protects learners from exclusion and moderates differences of opinion without suppressing individuality.

The model also extends traditional interpretations of tolerance education. In many pedagogical contexts, tolerance is discussed as a moral quality of learners. However, the teacher's own professional tolerance is a prerequisite for creating an environment where learners can internalize respectful behaviour. If the teacher's electronic feedback is impatient, discriminatory or humiliating, formal lessons on tolerance lose credibility. The teacher's digital communication becomes a hidden curriculum that shapes learners' understanding of dignity, fairness and social responsibility.

A specific strength of the diagnostic framework is its multi-source structure. Self-assessment alone cannot reveal actual competence because teachers may overestimate their tolerance or interpret socially approved answers as professional reality. Observation, case performance and analysis of digital communication provide additional evidence. Reflective diaries are especially important because they reveal how teachers understand their own reactions and whether they can transform experience into professional growth. At the same time, the use of digital communication analysis requires ethical caution. Schools should anonymize learners' data, obtain necessary consent and avoid punitive interpretation of diagnostic results.

The practical implementation of the model can occur through modular professional development. The first module may focus on theoretical foundations of pedagogical tolerance and learner diversity. The second module may develop digital ethics and media literacy. The third module may train tolerant digital communication through cases and simulations. The fourth module may address conflict prevention and moderation of online discussions. The fifth module may organize reflective practice through portfolios, peer review and supervision. Such modularity allows schools to adapt the model to local needs without destroying its internal logic.

Several limitations must be acknowledged. The model is theoretically substantiated, but it requires empirical verification with teachers from different school levels, regions and subject

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areas. Future research should test the reliability of the proposed indicators, determine the diagnostic sensitivity of the levels and analyze how changes in teacher competence influence learner participation, classroom climate and conflict frequency in digital learning environments. Quantitative measurement should be combined with qualitative observation because tolerance is expressed in context-dependent pedagogical choices.

Conclusion

The digitalization of education makes pedagogical tolerance a more complex and practically significant teacher competence. In digital learning environments, tolerance is expressed through ethical written communication, respectful online moderation, fair digital assessment, media-critical orientation, conflict prevention and reflective regulation of professional behaviour. The teacher's competence cannot be reduced to technological literacy because digital tools require humanistic pedagogical governance.

The article proposes a methodological model that integrates target, conceptual, content, process-technological, organizational-pedagogical, diagnostic and result blocks. The model is based on competence-based, axiological, activity-based, communicative and reflective approaches. It treats digital tools as pedagogical means for forming respectful interaction, not as independent guarantees of educational quality. The diagnostic framework includes cognitive, value-motivational, communicative-behavioural and reflective-regulatory criteria. Each criterion is connected with indicators and assessment tools that make the development of competence observable and manageable.

The proposed model may be applied in teacher professional development, school methodological work and further empirical research. Its implementation requires an institutional culture that supports ethical digital communication, collegial reflection, psychologically safe feedback and cooperation between teachers, learners and parents. When these conditions are met, the development of pedagogical tolerance competence can contribute to more inclusive, dialogic and conflict-sensitive schooling under digital transformation.

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