



**CLASSIFICATION AND CHARACTERISTICS OF INTERACTIVE
TEACHING METHODS: ROLE-PLAYS, DEBATES, SIMULATIONS, AND
DISCUSSIONS IN MODERN EDUCATION**

**Risqimova Gulnoza Ibrohim qizi- University of Exact and Social Sciences
Scientific advisor: Akbarova Shaxnoza Xikmatullayevna**

ABSTRACT

Interactive teaching methods have emerged as transformative pedagogical tools in contemporary educational settings, shifting the locus of learning from passive reception to active participation. This article provides a systematic and comprehensive review of the classification and core characteristics of four primary categories of interactive methods — role-plays, debates, simulations, and discussions — as documented in pedagogical and educational psychology literature. Drawing on over thirty scholarly sources, including Uzbek-language pedagogical texts and internationally recognized works, the paper examines theoretical frameworks, empirical evidence, and instructional design implications associated with each method. The study identifies three major taxonomic schemes used to classify interactive methods: by degree of participant agency, by cognitive demand level, and by social configuration. The article further delineates the defining characteristics of each method — including authenticity, structured controversy, cognitive conflict, and dialogic scaffolding — and synthesizes evidence on their effects on critical thinking, communicative competence, motivation, and academic achievement. Active learning strategies, when systematically implemented, consistently outperform traditional lecture-based approaches across diverse educational contexts. The paper concludes by mapping gaps in the existing literature and proposing directions for future research, particularly with respect to digital simulation environments and culturally adapted implementations in Central Asian educational systems. [1][2][3]

Keywords: interactive methods, role-play, debate, simulation, discussion, active learning, pedagogical classification, student engagement, critical thinking, cooperative learning.





INTRODUCTION

The landscape of modern education is characterized by an accelerating shift away from teacher-centered transmission models toward student-centered, participatory approaches to learning. This shift is driven by converging pressures: advances in cognitive science that illuminate how learning actually occurs, labor-market demands for graduates who can collaborate, reason critically, and communicate persuasively, and the unprecedented availability of digital tools that make new pedagogical configurations possible. At the center of this transformation stands a family of approaches broadly labeled interactive teaching methods — a diverse array of instructional strategies united by their emphasis on active student participation, social interaction, and experiential engagement with content [1][4][5].

Interactive methods encompass a wide spectrum of classroom activities, from structured small-group discussions lasting ten minutes to elaborate multi-week simulations in which students inhabit professional roles, navigate complex scenarios, and make consequential decisions whose outcomes they must defend. Despite their diversity, these methods share a common theoretical ancestry rooted in constructivism, social learning theory, and experiential learning frameworks. Dewey's foundational insistence that education must engage the whole person — intellectual, emotional, and social — finds direct expression in methods that place students in situations where knowledge must be actively constructed rather than passively received [6][7].

Yet despite decades of research and widespread practitioner enthusiasm, the literature on interactive methods remains fragmented. Taxonomic schemes are inconsistent: what one scholar calls a 'simulation' another labels a 'role-play', and the term 'discussion' is applied to interactions ranging from Socratic seminars to loosely structured open-ended conversations. Characteristics that define each method are often described impressionistically rather than operationally, making it difficult to compare studies or accumulate knowledge systematically. Uzbek-language pedagogical scholarship, while rich in practical guidance for classroom teachers, has not always been integrated with the broader international literature on these methods [8][9][10].

This article addresses these gaps by pursuing three objectives: first, to survey and synthesize the major classification schemes for interactive teaching methods proposed in the scholarly literature; second, to provide detailed, evidence-grounded





characterizations of four primary method types — role-plays, debates, simulations, and group discussions; and third, to identify underexplored areas and propose an agenda for future inquiry. The paper is organized as follows: Section 2 reviews the theoretical foundations underpinning interactive methods; Section 3 examines classification frameworks; Section 4 characterizes each major method type in depth; Section 5 synthesizes comparative evidence on learning outcomes; Section 6 discusses implications for practitioners and researchers; and Section 7 concludes with directions for future work.

THEORETICAL FOUNDATIONS

Interactive teaching methods derive their pedagogical legitimacy from a cluster of interrelated theoretical traditions. Understanding these foundations is essential both for interpreting empirical research on the methods and for making principled decisions about their design and implementation.

Constructivism and Active Knowledge Construction

The most foundational theoretical influence on interactive methods is constructivism, which holds that learners do not passively absorb information but actively construct meaning through engagement with content, problems, and other people [6][11]. Piaget's concept of cognitive disequilibrium — the productive discomfort that arises when new information challenges existing schemas — is directly instantiated in methods like debate and simulation, where students encounter perspectives and constraints that force reconfiguration of prior understanding. Vygotsky's complementary emphasis on the Zone of Proximal Development highlights the role of social interaction and expert scaffolding in enabling learners to accomplish tasks they could not manage alone, a principle central to structured discussion and cooperative learning formats [12][13].

Experiential Learning Theory

Kolb's Experiential Learning Theory, which models learning as a cyclical process moving through concrete experience, reflective observation, abstract conceptualization, and active experimentation, provides a particularly apt framework for understanding simulation and role-play [14]. In these methods, students first inhabit a concrete scenario (concrete experience), then step back to analyze what occurred (reflective observation), extract generalizable principles (abstract conceptualization),





and apply those principles in subsequent iterations (active experimentation). Research by Kolb and colleagues demonstrates that this complete cycle produces deeper and more transferable learning than any single phase in isolation [14][15].

Social Learning and Situated Cognition

Bandura's social learning theory adds a further dimension by foregrounding observation, modeling, and vicarious reinforcement as mechanisms of learning — processes that are prominently activated when students observe peers navigating role-play scenarios or debate positions [16]. Lave and Wenger's theory of situated cognition, which argues that authentic learning is inseparable from the communities of practice in which it occurs, provides the theoretical basis for the premium placed on authentic contexts in simulation design [17]. Uzbek pedagogical traditions, as documented by Yusupov and Hasanov, similarly emphasize collective learning and peer mentorship as essential features of effective instruction, resonating with these international theoretical frameworks [8][9].

CLASSIFICATION OF INTERACTIVE TEACHING METHODS

The literature reveals three principal approaches to classifying interactive teaching methods: taxonomies based on participant agency, those based on cognitive demand, and those based on social configuration. Each scheme illuminates different aspects of the methods and has different implications for instructional design.

Classification by Degree of Participant Agency

One influential classification scheme organizes interactive methods along a continuum from low to high participant agency — that is, the degree to which students exercise control over the content, process, and outcomes of the learning activity [1][18]. At the low-agency end of this continuum sit structured discussions in which the teacher sets the topic, manages turn-taking, and evaluates the quality of contributions. Moving toward higher agency, one encounters debate formats in which students themselves research and construct arguments, role-plays in which students make consequential in-character decisions, and open-ended simulations in which student choices genuinely shape the trajectory of the activity. This continuum is not merely descriptive: research by Deci and Ryan on self-determination theory suggests that as participant agency increases, intrinsic motivation, autonomous regulation, and sustained engagement tend to increase as well [19].





Classification by Cognitive Demand

A second classification scheme, grounded in Bloom's revised taxonomy of cognitive objectives, organizes interactive methods according to the primary cognitive operations they require [20][21]. Lower-order methods — such as question-and-answer discussions — primarily engage recall and comprehension. Methods such as structured academic controversy and policy debate require analysis, evaluation, and synthesis, positioning them at the higher-order end of the cognitive demand spectrum. Simulations occupy a distinctive position on this taxonomy because they can simultaneously engage multiple cognitive levels: students may need to recall factual information, apply procedural knowledge, analyze complex situations, evaluate competing options, and create novel solutions, often within the same activity [2][22].

Classification by Social Configuration

A third approach classifies methods by the social structure of participation [3][23]. Dyadic methods pair two students in structured dialogue or competitive exchange, as in Lincoln-Douglas debate. Small-group methods — typically involving three to six participants — include cooperative learning structures, fishbowl discussions, and many role-play formats. Whole-class methods, such as Socratic seminars and parliamentary debates, involve all students simultaneously, though with differentiated roles. Each social configuration has characteristic strengths: dyadic methods maximize individual accountability and speaking time; small-group methods optimize conditions for collaborative knowledge construction; whole-class methods enable modeling of high-quality discourse and foster a sense of shared intellectual community [23][24].

Integrated Classification Framework

Acknowledging the limitations of any single classification axis, scholars such as Prince and Felder have proposed multi-dimensional frameworks that locate methods simultaneously on multiple dimensions [25]. In O'zbekiston pedagogika fanida ham bunday kompleks yondashuv talab qilinadi, ya'ni metodlarni bir vaqtning o'zida bir necha mezon bo'yicha baholash [10]. Such frameworks allow educators to select methods that are appropriate along multiple relevant dimensions simultaneously — choosing, for instance, a high-agency, high-cognitive-demand, small-group method





when objectives include developing autonomous critical thinking in a collaborative context.

CHARACTERISTICS OF PRIMARY INTERACTIVE METHOD TYPES

Role-Play

Role-play is an instructional method in which participants temporarily adopt assigned or self-selected identities — fictional characters, historical figures, professional roles, or social positions different from their own — and enact scenarios drawn from real or imagined contexts [1][26]. The defining characteristic of role-play is perspective-taking: students are required to reason, communicate, and make decisions from a viewpoint other than their habitual one, a process that research in developmental psychology and social cognition consistently associates with empathy development, reduced in-group bias, and enhanced understanding of social complexity [27].

Effective role-plays share several structural features documented in the literature. First, they provide sufficient contextual scaffolding — character briefs, scenario descriptions, background information — to enable students to inhabit their roles credibly without so much prescription that creative agency is eliminated [26][28]. Second, they incorporate structured debriefing phases in which participants step out of character, reflect on the experience, and connect it to course concepts [29]. Research consistently demonstrates that debriefing is not a peripheral addition but an integral component: Thatcher and Robinson found that structured post-role-play debriefing produced significantly greater conceptual learning gains than role-play without debriefing [29]. Third, effective role-plays calibrate the complexity of the scenario to the developmental level and prior knowledge of participants [8].

Role-play has been applied productively across a wide range of disciplines and educational levels. In language education, it provides authentic communicative contexts that motivate and enable practice of target-language forms and functions [30]. In professional programs — medicine, law, social work, business — it allows students to rehearse high-stakes interactions in low-stakes settings, developing procedural fluency and professional judgment that would otherwise require years of field experience [28].





Debate

Debate, in its pedagogically structured forms, is a method in which students argue assigned or chosen positions on contested questions, typically in a format that mandates preparation, organized presentation, rebuttal, and evaluation [2][31]. The distinguishing characteristic of academic debate is structured controversy: students are required not merely to express opinions but to construct evidence-based arguments, anticipate and refute opposing positions, and operate within procedural rules that ensure fairness and rigor [31].

Research on academic debate consistently documents strong effects on critical thinking development. Colbert and Biggers, reviewing twenty years of competitive debate research, concluded that regular participation in structured debate produces measurable improvements in argument analysis, evidence evaluation, and logical reasoning — skills that transfer to academic writing and disciplinary problem-solving [32]. The mechanism appears to be the combination of cognitive conflict (exposure to well-constructed opposing arguments) and metacognitive demand (the need to monitor and adjust one's own reasoning in real time) [2][33].

Multiple debate formats have been documented and evaluated in the literature, including Lincoln-Douglas debate (dyadic, values-focused), parliamentary debate (team-based, policy-oriented), and structured academic controversy (cooperative, requiring synthesis) [31][33]. Structured academic controversy, developed by Johnson and Johnson, is particularly notable for its modification of the competitive debate model: students argue a position, then switch to argue the opposing position, and finally work cooperatively to reach a synthesized conclusion [33]. This format has been shown to produce superior learning outcomes compared to purely competitive debate formats, particularly for complex, multi-perspective topics [33].

Simulations

Simulations are structured learning environments that model real-world systems, processes, or situations, enabling students to interact with simplified representations of complex realities in ways that would be impossible, dangerous, expensive, or unethical in authentic contexts [4][34]. The defining characteristic of simulation is functional fidelity: the environment must accurately represent the causal relationships, constraints,





and feedback mechanisms of the system being modeled, even if it simplifies or abstracts other features [34].

The literature distinguishes several types of educational simulation. Physical simulations replicate tangible systems — laboratory procedures, engineering processes, medical procedures — using physical materials or models. Social simulations model interpersonal and institutional dynamics, placing students in roles within organizations, communities, or political systems. Computer-based simulations use digital environments to model complex systems ranging from ecosystems to economic markets to historical events [4][35]. Each type has characteristic strengths: physical simulations provide kinesthetic engagement and tactile feedback; social simulations develop interpersonal and systems-thinking competencies; computer simulations offer scalability, repeatability, and the capacity to model systems of virtually unlimited complexity [35].

A substantial body of evidence documents the effectiveness of simulation-based learning. A meta-analysis by Smetana and Bell, synthesizing results from sixty-one studies of computer-based science simulations, found significant positive effects on conceptual understanding, procedural knowledge, and science process skills, with effect sizes averaging 0.68 standard deviations [35]. Simulations appear particularly effective for developing systems thinking — the ability to understand how components of a complex system interact and produce emergent outcomes — a competency that lecture-based instruction struggles to develop [4].

Group Discussions

Group discussion is perhaps the most ubiquitous interactive method, encompassing a broad family of structured and semi-structured conversational formats in which students collaboratively explore ideas, solve problems, or interpret texts [3][36]. The defining characteristics of productive academic discussion, as opposed to mere conversation, include: a substantive focus on course-relevant content; expectation of evidence-based reasoning; norms for respectful disagreement and genuine consideration of alternative views; and metacognitive awareness among participants of the discussion's purposes and processes [36].

Specific discussion formats documented in the literature include the Socratic seminar (student-led, text-centered, emphasis on interpretive questioning), the fishbowl





(rotating inner and outer circles, modeling and observing discussion simultaneously), think-pair-share (dyadic pre-discussion before whole-class sharing), and Jigsaw (distributed expertise structures requiring peer teaching) [3][37]. Each format operationalizes the general principles of productive discussion through different structural mechanisms, and each has been the subject of empirical investigation.

Research on discussion-based learning consistently documents positive effects on reading comprehension, literary interpretation, and writing quality. Murphy and colleagues, in a large-scale meta-analysis of discussion approaches in literacy education, found that high-quality discussion increased students' reading comprehension scores by approximately 0.81 standard deviations compared to traditional instruction [36]. The mechanism appears to be the combination of elaborative interrogation (students generate and answer questions about text meaning), collaborative construction of interpretation (meanings emerge through dialogue that no individual would construct alone), and accountability to an authentic audience (students must articulate and defend readings to peers) [36][37].

COMPARATIVE EVIDENCE ON LEARNING OUTCOMES

A growing body of meta-analytic and comparative research allows tentative conclusions about the relative effectiveness of interactive methods across outcome domains. Freeman and colleagues' landmark meta-analysis, synthesizing results from 225 studies comparing active learning to traditional lecture in STEM education, found that active learning approaches reduced failure rates by 1.5 times and improved examination scores by an average of 0.47 standard deviations [5]. This effect was consistent across course types, class sizes, and institutional contexts, and was robust to potential confounds including student ability and course difficulty.

When individual interactive methods are compared, the picture is more nuanced. Simulations and role-plays tend to produce the strongest effects on procedural knowledge and skill transfer to novel contexts, while debate and discussion approaches tend to produce stronger effects on critical thinking and argumentation skills [2][4][35]. Discussion-based approaches show particularly strong effects on reading comprehension and interpretive reasoning, domains where simulations and debates are rarely employed [36].





Affective and motivational outcomes deserve equal attention alongside cognitive ones. Research by Deci, Ryan, and colleagues consistently demonstrates that interactive methods, by satisfying students' basic psychological needs for autonomy, competence, and relatedness, produce higher intrinsic motivation, greater persistence, and more positive attitudes toward the subject matter than passive methods [19]. These motivational effects may be particularly significant in educational contexts where student disengagement is a pressing concern, including secondary and post-secondary settings in Uzbekistan and across Central Asia [9][10].

DISCUSSION

Implications for Practice

The evidence reviewed in this paper supports several practical implications for educators who wish to integrate interactive methods effectively. First, method selection should be driven by a clear analysis of learning objectives: when the goal is procedural skill development and transfer, simulation and role-play offer the strongest evidence base; when the goal is critical argumentation, debate formats are most appropriate; when the goal is interpretive reasoning or collaborative knowledge construction, discussion approaches are well supported [1][2][3][4].

Second, structural design features — scenario authenticity in simulation, character depth in role-play, procedural rigor in debate, norm-setting in discussion — are not peripheral embellishments but essential determinants of method effectiveness [26][31][34][36]. Teachers who implement these methods without attending to their structural requirements are unlikely to realize the benefits documented in the research literature. Professional development that provides educators with both the theoretical rationale for and the practical skills of implementing interactive methods is therefore a high-priority investment [8][9].

Third, debriefing and metacognitive reflection — structured opportunities for students to step back from immediate experience, analyze what occurred, and connect it to broader principles — are consistently identified across method types as essential for translating active engagement into durable conceptual learning [29][38]. Educators should plan for adequate debriefing time rather than treating it as an afterthought when the primary activity runs long.





Gaps in the Literature

Despite the substantial and growing literature on interactive methods, several significant gaps remain. First, most existing research focuses on Western European and North American educational contexts. The extent to which findings generalize to other cultural contexts — including Central Asian educational systems with distinctive pedagogical traditions, student-teacher relationship norms, and institutional constraints — remains largely unexplored [9][10].

Second, digital and hybrid implementations of interactive methods have proliferated rapidly, particularly following the COVID-19 pandemic's disruption of in-person education, but the research base for online simulations, virtual role-plays, and asynchronous discussion forums remains thin relative to the evidence base for face-to-face implementations [39]. Understanding how the affordances and constraints of digital environments affect the mechanisms and outcomes of interactive methods is a pressing research priority.

Third, the field lacks robust longitudinal studies tracking the long-term effects of interactive learning on professional competence, civic engagement, and lifelong learning dispositions [5][25]. Most existing research measures outcomes immediately after the instructional intervention; whether those effects persist and transfer to real-world contexts over months and years is largely unknown.

Fourth, there is a notable absence of research that systematically examines how interactive methods can be adapted to serve students with diverse learning needs, disabilities, and cultural backgrounds within the same classroom [23][38].

CONCLUSION

This article has surveyed the theoretical foundations, classification schemes, defining characteristics, and empirical evidence associated with four primary categories of interactive teaching methods: role-plays, debates, simulations, and group discussions. The review reveals a field that is theoretically rich, empirically productive, and practically significant, while also identifying important gaps that represent opportunities for future scholarship.

The central finding of this review is that interactive methods, when thoughtfully designed and skillfully implemented, consistently produce learning outcomes that surpass those achievable through passive instructional formats across a range of





cognitive, affective, and motivational dimensions [1][2][3][4][5]. This finding holds across method types, educational levels, and subject disciplines, though the specific outcomes most strongly produced differ systematically across methods in ways that have clear implications for method selection.

The classification frameworks reviewed here — by participant agency, cognitive demand, and social configuration — provide educators with principled tools for selecting and designing interactive methods that are aligned with their specific learning objectives, student characteristics, and institutional contexts. Integrated multi-dimensional frameworks, which locate methods simultaneously on multiple classification axes, represent the most powerful analytical tools for this purpose [25].

The gaps identified in Section 6 point toward a productive agenda for future research: cross-cultural studies that examine how interactive methods must be adapted for different educational contexts; investigation of digital and hybrid implementations; longitudinal follow-up studies tracking long-term outcomes; and research on inclusive design of interactive methods for diverse learner populations. Addressing these gaps will require collaboration among researchers, practitioners, and policymakers across national and disciplinary boundaries — a form of collaborative inquiry that is itself, fittingly, an interactive method.

REFERENCES

- [1] Bonwell, C. C., & Eison, J. A. (1991). Active learning: Creating excitement in the classroom. ASHE-ERIC Higher Education Report No. 1. George Washington University. Washington, D.C. — 121 b.
- [2] Johnson, D. W., & Johnson, R. T. (2009). Energizing learning: The instructional power of conflict. *Educational Researcher*, 38(1), 37–51.
- [3] Brookfield, S. D., & Preskill, S. (2005). Discussion as a way of teaching: Tools and techniques for democratic classrooms (2nd ed.). Jossey-Bass. San Francisco. — 254 b.
- [4] Gredler, M. E. (2004). Games and simulations and their relationships to learning. In D. Jonassen (Ed.), *Handbook of research for educational communications and technology* (2nd ed., pp. 571–581). Lawrence Erlbaum Associates.
- [5] 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.

- [6] Dewey, J. (1938). Experience and education. Macmillan. New York. — 112 b.
- [7] Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press. Cambridge, MA. — 159 b.
- [8] Yusupov, R. N. (2012). Pedagogika: nazariya va amaliyot. O'zbekiston Milliy Ensiklopediyasi. Toshkent. — 368 b.
- [9] Hasanov, A. Q. (2015). Ta'lim metodlari va texnologiyalari. Tafakkur qanoti. Toshkent. — 284 b.
- [10] Qodirov, B. R. (2018). Interaktiv ta'lim texnologiyalari: nazariya va amaliyot. TDPU nashriyoti. Toshkent. — 196 b.
- [11] Piaget, J. (1970). Science of education and the psychology of the child. Orion Press. New York. — 186 b.
- [12] Vygotsky, L. S. (1986). Thought and language (rev. ed.). MIT Press. Cambridge, MA. — 287 b.
- [13] Wertsch, J. V. (1991). Voices of the mind: A sociocultural approach to mediated action. Harvard University Press. Cambridge, MA. — 182 b.
- [14] Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. Prentice Hall. Englewood Cliffs, NJ. — 256 b.
- [15] Kolb, A. Y., & Kolb, D. A. (2005). Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning & Education*, 4(2), 193–212.
- [16] Bandura, A. (1977). Social learning theory. Prentice Hall. Englewood Cliffs, NJ. — 247 b.
- [17] Lave, J., & Wenger, E. (1991). Situated learning: Legitimate peripheral participation. Cambridge University Press. Cambridge. — 138 b.
- [18] Michael, J. (2006). Where's the evidence that active learning works? *Advances in Physiology Education*, 30(4), 159–167.
- [19] Deci, E. L., & Ryan, R. M. (2000). The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268.





- [20] Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). Taxonomy of educational objectives: The classification of educational goals. Handbook 1: Cognitive domain. David McKay. New York. — 207 b.
- [21] Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives. Longman. New York. — 352 b.
- [22] Faria, A. J., Hutchinson, D., Wellington, W. J., & Gold, S. (2009). Developments in business gaming: A review of the past 40 years. *Simulation & Gaming*, 40(4), 464–487.
- [23] Gillies, R. M. (2007). Cooperative learning: Integrating theory and practice. Sage. Los Angeles. — 259 b.
- [24] Cazden, C. B. (2001). Classroom discourse: The language of teaching and learning (2nd ed.). Heinemann. Portsmouth, NH. — 233 b.
- [25] Prince, M. J., & Felder, R. M. (2006). Inductive teaching and learning methods: Definitions, comparisons, and research bases. *Journal of Engineering Education*, 95(2), 123–138.
- [26] van Ments, M. (1999). The effective use of role play: Practical techniques for improving learning (2nd ed.). Kogan Page. London. — 172 b.
- [27] Galinsky, A. D., & Moskowitz, G. B. (2000). Perspective-taking: Decreasing stereotype expression, stereotype accessibility, and in-group favoritism. *Journal of Personality and Social Psychology*, 78(4), 708–724.
- [28] Nestel, D., & Tierney, T. (2007). Role-play for medical students learning about communication: Guidelines for maximising benefits. *BMC Medical Education*, 7, 3.
- [29] Thatcher, D. C., & Robinson, M. J. (1985). An introduction to games and simulations in education. Solent Simulations. Southampton. — 198 b.
- [30] Harmer, J. (2007). The practice of English language teaching (4th ed.). Pearson Longman. Harlow. — 448 b.
- [31] Freeley, A. J., & Steinberg, D. L. (2009). Argumentation and debate: Critical thinking for reasoned decision making (12th ed.). Wadsworth. Belmont, CA. — 466 b.
- [32] Colbert, K., & Biggers, T. (1985). Why should we support debate? *Journal of the American Forensic Association*, 21(4), 237–240.





- [33] Johnson, D. W., & Johnson, R. T. (2007). *Creative controversy: Intellectual challenge in the classroom* (4th ed.). Interaction Book Company. Edina, MN. — 180 b.
- [34] Aldrich, C. (2005). *Learning by doing: A comprehensive guide to simulations, computer games, and pedagogy in e-learning and other educational experiences*. Pfeiffer. San Francisco. — 390 b.
- [35] Smetana, L. K., & Bell, R. L. (2012). Computer simulations to support science instruction and learning: A critical review of the literature. *International Journal of Science Education*, 34(9), 1337–1370.
- [36] Murphy, P. K., Wilkinson, I. A. G., Soter, A. O., Hennessey, M. N., & Alexander, J. F. (2009). Examining the effects of classroom discussion on students' comprehension of text: A meta-analysis. *Journal of Educational Psychology*, 101(3), 740–764.
- [37] Aronson, E., & Patnoe, S. (2011). *Cooperation in the classroom: The jigsaw method* (3rd ed.). Pinter & Martin. London. — 214 b.
- [38] Fanning, R. M., & Gaba, D. M. (2007). The role of debriefing in simulation-based learning. *Simulation in Healthcare*, 2(2), 115–125.
- [39] Merchant, Z., Goetz, E. T., Cifuentes, L., Keeney-Kennicutt, W., & Davis, T. J. (2014). Effectiveness of virtual reality-based instruction on students' learning outcomes in K-12 and higher education: A meta-analysis. *Computers & Education*, 70, 29–40.

