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BUILDING RESILIENCE THROUGH AI-ASSISTED SIMULATION IN TEACHER EDUCATION: A SURVEY-BASED NEEDS ANALYSIS

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The article addresses the importance of resilience-oriented practices in pre-service teacher education. The study's relevance lies in the growing professional pressure on novice teachers in Ukraine, the increasing need for trauma-sensitive, conflict-aware communication, and the insufficient practice-based training in university teacher education. The aim of the article is to analyse pre-service teachers' perceived readiness for difficult professional situations and to substantiate AI-assisted simulations training as a methodological tool for building and maintaining professional resilience in pre-service English teacher education. The empirical basis of the study is a pilot questionnaire survey conducted among 53 undergraduate students majoring in Secondary Education at the English Department at Yuriy Fedkovych Chernivtsi National University. The study employs descriptive analysis of closed-ended responses and thematic grouping of open-ended answers. The results demonstrate the following: (1) students rate their readiness for challenging professional situations as moderate rather than high, (2) report insufficient practice of conflict resolution and professional communication in current university training, and (3) express interest in AI-assisted simulation as a form of professional preparation. The open-ended responses identified four main categories of challenging professional situations: conflict with parents, trauma-sensitive communication with learners, classroom management under pressure, and difficult interactions with colleagues or school administration. Drawing on these results, the article proposes a novel methodological design based on Mizou as the planned platform for AI-assisted dialogic simulations between pre-service teachers and conflicting personas. The developed training model will be integrated into the course Methods of English Language Teaching, with the possibility for asynchronous training via a supportive Moodle course. The training follows the reflective cycle: briefing → AI simulation → debriefing, which allows practising professional communication skills, such as conflict de-escalation, emotional self-regulation, and empathetic listening. It is concluded that AI simulation-based training can serve as a practical, controlled, and pedagogically sound means of strengthening resilience-oriented pre-service teacher training.

Keywords: *AI simulation, pre-service teacher, professional resilience, teacher training, trauma-sensitive communication.*

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ФОРМУВАННЯ РЕЗИЛІЄНТНОСТІ ЗАСОБАМИ ІІІ-ПІДТРИМУВАНОГО СИМУЛЯТИВНОГО НАВЧАННЯ У ПІДГОТОВЦІ МАЙБУТНІХ ВЧИТЕЛІВ: АНАЛІЗ ПОТРЕБ НА ОСНОВІ ОПИТУВАННЯ

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У статті розглянуто значущість резилієнтно-орієнтованих практик у підготовці майбутніх учителів. Актуальність дослідження зумовлена зростанням професійного тиску на молодих учителів в Україні, посиленням потреби у травма-чутливій і конфліктно-чутливій комунікації, а також недостатньою практико-орієнтованою складовою університетської педагогічної освіти. Метою статті є проаналізувати уявлення майбутніх учителів про власну готовність до складних професійних ситуацій та обґрунтувати ІІІ-підтримуване симулятивне навчання як методичний інструмент для формування й підтримання професійної резилієнтності у підготовці майбутніх учителів англійської мови. Емпіричну основу дослідження становить пілотне анкетне опитування, проведене серед 53 здобувачів освіти бакалаврського рівня спеціальності "Середня освіта" кафедри англійської мови Чернівецького національного університету імені Юрія Федьковича. У дослідженні застосовано описовий аналіз відповідей на закриті запитання та тематичне групування відповідей на відкриті запитання. Результати засвідчили, що: (1) студенти оцінюють свою готовність до складних професійних ситуацій як радше помірну, ніж високу; (2) повідомляють про недостатню практику розв'язання конфліктів і професійної комунікації в межах чинної університетської підготовки; (3) виявляють зацікавленість в ІІІ-підтримуваному моделюванні як формі професійної підготовки. Відкриті відповіді дали змогу виокремити чотири основні категорії складних професійних ситуацій: конфлікт із батьками, травматичну комунікацію з учнями, управління класом в умовах тиску та складну взаємодію з колегами або адміністрацією закладу освіти. Спираючись на ці результати, у статті запропоновано нову методичну модель, що ґрунтується на використанні платформи Mizon як запланованого середовища для ІІІ-підтримуваних діалогічних симуляцій між майбутніми вчителями та конфліктними персонами. Розроблена модель навчання буде інтегрована в курс "Методика викладання англійської мови" з можливістю асинхронного тренування через допоміжний курс у Moodle. Навчання організовано за рефлексивним циклом: брифінг → АІ-симуляція → дебрифінг, що дає змогу відпрацьовувати такі навички професійної комунікації, як деескалація конфлікту, емоційна саморегуляція та емпатійне слухання. Зроблено висновок, що ІІІ-підтримуване симулятивне навчання може слугувати практичним, контрольованим і педагогічно обґрунтованим засобом посилення резилієнтно-орієнтованої підготовки майбутніх учителів.

Ключові слова: ІІІ-симуляція, майбутній учитель, професійна резилієнтність, підготовка вчителя, травма-чутлива комунікація.

Introduction of the issue. The professional university training of future English teachers faces a practical challenge: while providing methodological knowledge, it often fails to prepare them for communicatively complex situations in real school settings. Upon entering the profession, novice teachers often encounter emotionally vulnerable learners, classroom disruptions, and additional stress from communication with colleagues and school administration. In the Ukrainian context, these challenges have become more acute due to wartime pressure and the growing operational complexity of school interactions,

creating a gap between theoretical preparation and real teaching practice.

The *object* of the study is the professional preparation of pre-service English teachers for difficult communicative situations in school settings. The *subject* of the study is AI-assisted simulation training as a methodological tool for strengthening professional resilience in pre-service English teacher education.

Outline of unresolved issues brought up in the article. Recent research shows that teacher resilience should be understood as the capacity to act ethically, communicate responsibly, and uphold democratic principles under

pressure. It has become a core competence for education professionals [14]. Studies on AI-assisted simulation training indicate that controlled practice is an effective way of preparing students for complex professional situations [2].

However, several issues remain insufficiently resolved. Resilience-oriented preparation is rarely translated into concrete training formats; AI-assisted teaching approaches are not widely applied in pre-service teacher education. The *relevance of the study* is determined by two methodological gaps: the need to develop more resilience-oriented teacher-training models at the higher education level and to integrate AI tools into education.

Aim of the research is to analyse pre-service teachers' perceived readiness for difficult professional situations and to substantiate the AI-assisted simulation training model for resilience-oriented training. To achieve this objective, the following *tasks* are set:

(1) to outline the theoretical foundations of resilience-oriented pre-service teacher training;

(2) to analyse the results of a pilot survey on students' readiness for difficult professional situations;

(3) to propose a methodological model of AI-assisted simulation training. The next section of the article logically mirrors the *algorithm* for completing these tasks.

The *theoretical value* of the article lies in clarifying the role of resilience-oriented preparation in pre-service English teacher education and in substantiating AI-assisted simulation training for practising professional communication. The *practical value* lies in proposing an innovative AI-based training model that can be integrated into university teacher education and adapted to the needs of future English teachers.

Current state of the issue. Current educational scholarship defines teacher resilience not as an inherent personal quality, but as a professional capacity that develops through interaction with various participants of a demanding

educational context. A recent systematic review by G. Mu shows that resilience has become a priority in pre-service teacher education, yet its practical strengthening within university training remains shallow [11]. Research by S. Salvo-Garrido, P. Cisternas-Salcedo, and K. Polanco-Levicán shows that teacher resilience is built through interactions with learners, their families, and school colleagues, and that it directly influences not only the classroom's 'healthy' environment but also shapes the quality of teaching [15]. Therefore, future English teachers require not only methodological knowledge of language teaching, but also the ability to act professionally in difficult interpersonal situations.

In Ukraine, this issue acquires additional urgency caused by wartime pressure. UNESCO's 2024 report indicates that support for teachers has become a central educational priority [18]. O. Elkin and co-authors argue that social, emotional, and ethical learning in wartime education is an important part of teacher professional development in Ukraine [4: 597], meaning that future teachers must be prepared to work with emotionally vulnerable learners affected by war and displacement. However, presently, the teaching profession is under significant pressure. The report "*Teachers of Ukraine: Human Resources Potential. Trends and Modelling of Needs until 2030*" indicates rapid ageing of the teaching workforce, a low proportion of young teachers, and many teachers reporting high stress, dissatisfaction with working conditions, and insufficient support for professional development [13]. Similarly, O. Budnyk shows that the current teaching environment in Ukraine requires pedagogical, emotional, communicative, and ethical preparedness [3: 18]. Methodologically, structured practice in realistic but safe settings helps build professional resilience. R. Kasperski, O. Levin, and M. Hemi show that a simulation-based approach in teacher education develops social-emotional competencies in controlled pedagogical settings and

proves effective when integrated with reflection [7]. From that perspective, simulation can serve as a 'rehearsal' of potentially challenging professional communicative situations before the actual school practice.

Integrating resilience-oriented approaches could be achieved through AI educational tools. At the policy level, AI is now firmly present in various strategic documents. The *Digital Education Action Plan 2021-2027* frames digital transformation as a priority for European education systems [5]. In Ukraine, the Ministry of Education and Science has also issued recommendations on the use of AI in school education [10]. Recent publications confirm this methodological gap. L. Lukianova, K. Kotun, and K. Hodlevska show that while students and teachers in higher education engage with AI, its educational use still raises questions of pedagogy, ethics, and institutional support [9: 187]. However, AI is still predominantly discussed in terms of risks, rules, and general digital competence rather than as a training tool in instructional design for teacher education. European scholars are already testing the potential usage of AI-assisted simulations. A. Tlili and co-authors argue for safe and pedagogically guided use of AI in educational settings, in particular in "scenario design, role structure, communicative objectives, and guided reflection" [17: 401]. Other researchers view AI tools from a pedagogical perspective rather than only as a technical innovation [12: 375; 16: 2248]. Taken together, within the context of resilience-oriented teaching, AI-assisted simulation is methodologically sound, combining controlled practice, scenario variability, and reflection.

Research methods. The study draws on a pilot questionnaire to examine how pre-service English teachers evaluate their preparedness for difficult professional situations that require resilience and communicative competence. The questionnaire was administered online on **20-23 January 2026** among undergraduate students (1st-4th years of study, both full-time

and part-time) of Yuriy Fedkovych Chernivtsi National University, Faculty of Foreign Languages, Department of English, speciality 014 Secondary Education, specialisation English Language and Foreign Literature. The sample included **53 respondents**, of whom 5 were male and 48 were female. 26 respondents had prior teaching experience in private one-to-one teaching or in private language schools; 5 of them teach in state schools in Chernivtsi. Participation was anonymous and voluntary.

The questionnaire was created in Google Forms and consisted of two parts. The *closed-ended part* covered three aspects: self-assessment of readiness to handle challenging professional situations (such as dissatisfied parents, traumatised learners, internally displaced learners, etc.), the extent to which such situations are discussed and practised in current university training, and attitudes towards potential integration of AI-assisted simulation training in teacher education. The *open-ended part* asked respondents to describe one situation they would most fear facing alone during their first year of teaching.

The study combines *quantitative* and *qualitative analyses* of closed-ended responses. Thematic grouping of open-ended responses drew general tendencies in students' self-assessed readiness for anticipated professional challenges.

Results and discussion. The closed-ended part of the questionnaire included statements rated on a 1-5 scale, yes-no questions, and multiple-choice items. The statements referred to situations in which pre-service teachers assessed their readiness to act independently in the following settings:

- Regarding **dealing with a dissatisfied parent**, the majority of respondents reported moderate to high levels of perceived readiness. Specifically, 34% of participants selected level 4, while 32.1% indicated level 3. A smaller proportion (20.8%) rated their readiness at the highest level (5), whereas only a minority indicated low confidence (levels

1-2). Although pre-service teachers do not feel entirely unprepared, a considerable proportion still lack full confidence in managing parent-related conflicts.

- Situations involving **traumatised or emotionally vulnerable learners** were associated with lower levels of perceived confidence. The majority of respondents (39.6%) selected a moderate level (3), while only 5.7% reported the highest level of readiness. This suggests that pre-service teachers feel insufficiently prepared to handle emotionally complex classroom situations.

- Higher levels of confidence were observed when referring to **classroom discussions on democratic values**. A substantial proportion of respondents selected level 4 (43.4%), while 32.1% reported level 3, indicating a stronger sense of preparedness in communicative classroom settings.

Multiple-choice questions aimed to explore whether pre-service teachers had **opportunities to engage with challenging professional communication situations** (conflict resolution) through case studies, role-plays, or simulations. The majority of respondents (52.8%) reported occasionally practising these activities. Rare practice was reported by 22.6% of respondents. Only 13.2% of the students indicated that the aforementioned activities were a regular part of their training, whereas 11.3% had never practised them and had been exposed only to theoretical lectures.

When considering **the role of AI in professional training**, equal proportions of students (43.4%) believed that AI tools are potentially useful and were ready to integrate them into their training, while another 43.4% reported using AI tools in their professional preparation. A smaller proportion (13.2%) indicated that, although AI tools are effective, they need to explore their potential in professional pedagogical settings.

Yes-no questions were used to determine whether pre-service teachers would be willing to **practice complex dialogues with AI simulators** before engaging in real classroom communication. The majority of respondents (69.8%) indicated that they would be willing to do so, whereas 30.2% reported otherwise.

When asked about the **likelihood of emotional burnout** in the first three years of professional activity and the possibility of leaving the profession as a result, 77.4% of respondents reported this scenario was likely, whereas 22.6% of students dismissed it. The figures highlight an insufficient level of students' readiness to engage in classroom communication, posing a possible threat of leaving the profession within the first three years of their teaching practice. Conversely, the majority of respondents are ready to engage in AI simulations, which increases their confidence in their readiness for the teaching profession.

The main quantitative and qualitative findings of the pilot survey are summarised in Table 1.

Table 1

Summary of the pilot survey findings

Survey aspect	Key result
Readiness to deal with a dissatisfied parent	Level 4 – 34.0%; Level 3 – 32.1%; Level 5 – 20.8%
Readiness to work with traumatised or emotionally vulnerable learners	Level 3 – 39.6%; Level 5 – 5.7%
Readiness to discuss democratic values / tolerance with sceptical learners	Level 4 – 43.4%; Level 3 – 32.1%; Level 5 – 13.2%
Practice of conflict resolution /	Periodically – 52.8%; Rarely – 22.6%;

professional communication in current training	Regularly – 13.2%; Never – 11.3%
Attitudes to AI in professional preparation	Ready to integrate AI – 43.4%; Already use AI – 43.4%; Interested but unsure how to apply it professionally – 13.2%
Willingness to practise difficult conversations with an AI simulator	Yes – 69.8%; No – 30.2%
Fear of leaving the profession in the first three years due to emotional burnout	Yes – 77.4%; No – 22.6%
Most feared situations named in open-ended responses	Parent conflict; trauma-sensitive learner interaction; classroom management under pressure; difficult interaction with colleagues / administration; authority-related insecurity; ageism

As Table 1 shows, the identified difficulties are concentrated mainly in emotionally demanding and communicatively complex situations, which supports the need for more systematic resilience-oriented training in pre-service teacher education.

The majority of respondents reported fear of **being confronted by dissatisfied parents**. Either in relation to their professional competence or pupils' performance. Participants frequently mentioned the lack of trust in the teacher's competence and potentially confrontational settings, including aggressive behaviour from parents or parent-teacher conflicts.

Many respondents highlighted **emotionally demanding situations** involving pupils with traumatic experiences, often associated with wartime conditions. These included panic attacks, sudden mood changes, and emotional distress. Respondents also anticipated difficulty in supporting pupils experiencing psychological distress.

Another prominent theme concerned classroom management and pupils' behaviour. Respondents indicated **fear of dealing with pupils' misbehaviour**, addressing bullying, managing conflicts between pupils, and concerns about pupils' lack of motivation and disengagement.

A number of pre-service teachers expressed concerns about their

professional readiness. They reported uncertainty about their ability to respond effectively in unpredictable situations, establish authority in the classroom, and provide support to learners in challenging circumstances.

Lastly, a relatively small cohort of respondents mentioned **ageism**, which, in the context of young teachers entering school, presupposes biased or unfair treatment based on their young age, for example, when they are seen as less competent, less authoritative, or less professional simply because they are young. Regarding the survey, the respondents indicated that it may arise in interactions with colleagues and parents and could contribute to dissatisfaction with the teaching profession.

Overall, the qualitative findings indicate that pre-service teachers perceive the most challenging situations as those that require not only pedagogical knowledge but also advanced communicative, decision-making, and emotional skills. These concerns are consistent with the quantitative findings, which indicated lower levels of confidence in emotionally complex situations and in conflict-related classroom settings. These findings highlight the need for structured, hands-on training formats and provide the basis for the proposed AI-assisted simulation model.

Methodological potential and practical implementation of AI-assisted simulation training. An AI-assisted simulation training model is proposed as a practical response to the methodological gap between academic preparation and the professional demands of schoolwork. Its purpose is to provide pre-service English teachers with a structured, controlled rehearsal of challenging professional situations they might face in actual school settings. The study employs the concept of **AI personas**, that is, carefully designed "prompts that instruct the system to act not as a tutor, but as a particular participant in a professional situation" [2: 3]. Within the proposed model, each persona is linked to a defined scenario and a concrete training objective, enabling a transition from general interaction with AI to focused rehearsal of professional communication. The scenario types planned for the AI-assisted simulations include:

- *dealing with a dissatisfied parent;*
- *dealing with a traumatised or emotionally vulnerable learner;*
- *dealing with a disengaged student;*
- *dealing with a toxic colleague or school administrator.*

Each scenario targets specific resilience-oriented professional communication skills (such as self-regulation, de-escalation, boundary-setting, and constructive feedback) and, in the long term, aims to develop **Emotional Intelligence** (EI).

AI-assisted simulation trainings will take place on the platform **Mizou**, which allows the creation of multiple AI personas that follow prescribed scenarios. Unlike open-ended use of well-established AI agents (such as GPT or Gemini), Mizou enables the academic team to design specific persona prompts that mirror real communicative situations. Therefore, scenario quality depends not on spontaneous AI output but on the prescribed role for the AI persona.

The simulation training will be integrated into the regular university course **Methods of English Language**

Teaching, as part of broader topics related to psychological issues in teaching, classroom management, and professional communication, during 3 consecutive semesters (2nd-4th years of study). Additionally, a separate online course on the **ChNU Moodle platform** will provide asynchronous support, independent preparation, and follow-up work outside class.

The methodological logic of the proposed training model draws on the concept of experiential learning, which views professional development through *action*, *reflection*, and repeated *adjustment* of teaching strategies [8]. The classroom application of this logic within the proposed model will follow a simple instructional cycle: **briefing** → **AI simulation** → **debriefing**. Before the interaction, students receive the communicative task, the context, and the main focus of the scenario. During the interaction, each student uses a personal device to engage with an AI persona representing a specific stakeholder in school communication. After the simulation, students analyse their responses (first individually by writing a short reflection and then in small groups), identify successful and unsuccessful strategies, discuss the reasons behind certain communicative decisions, analyse the skills they trained while dealing with a challenging persona, and relate the experience to broader methodological and psychological issues in teaching.

Another concern in the AI-assisted training design is the need for *ethical* and *safety controls*. Recent research emphasises that AI in education must remain "human-centred and pedagogically responsible" [6: 39], which is an indispensable prerequisite for simulations involving trauma-sensitive interaction. In that regard, the proposed Mizou-based training model relies on controlled persona design and post-simulation reflection that would be psychologically safe.

Thus, the educational and methodological potential of the proposed training model lies in the opportunity for

pre-service teachers to use AI not as a source of ready-made answers but as a tool for practice, self-correction, and reflection.

Conclusions and research perspectives. The paper draws on existing research to address the gap between pre-service teachers' pedagogical training and their perceived readiness to handle emotionally complex communicative situations in the classroom. The analysis of the questionnaire, combining both quantitative and qualitative data, reveals a sense of uncertainty among student teachers alongside their willingness to engage in simulations of professionally

demanding communicative scenarios. Such trainings can be implemented through experiential learning via designed AI personas on platforms such as Mizou. This approach enables students to engage with realistic professional roles, which may contribute to a higher level of perceived readiness for the teaching profession.

Future research may explore the long-term impact of AI-assisted simulation training on the development of pre-service teachers' communicative competence and emotional resilience, as well as its integration into teacher-training curricula.

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