
**VIRTUAL REALITY IN THE PROFESSIONAL DEVELOPMENT OF
TEACHERS REGARDING THE ISSUE OF PEER BULLYING: INSIGHTS
AND REFLECTIONS**

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Abstract

One of the main factors determining the effectiveness of counteracting peer violence at school is the quality of staff preparation and training. Preparing teachers who will be able to effectively deal with manifestations of peer violence, including bullying, is not an easy task. Various studies show that teachers do not feel fully prepared to deal with the bullying problem, and they also admit that despite their education, they lack practical preparation. Despite the availability of various in-service training courses, there is still a need for training with a more practical inclination and for courses and activities combined with practice that will help teachers to acquire intervention skills and develop specific strategies for action. The aim of the article is to indicate and justify the need for more adequate preparation and professional development of teachers in the field of intervention and prevention of peer bullying, and above all to provide them with related experience. Secondly, the possibility of using virtual reality (VR) for this purpose, which offers new methods of teaching skills, will be discussed.

Key words: artificial intelligence, bullying, school violence, teachers, professional development, virtual reality.

Received 10 November 2024. Accepted 03 December 2024.

For citation: Tłuściak-Deliowska A., Duda E. (2024). Virtual Reality in the Professional Development of Teachers Regarding the Issue of Peer Bullying. Insights and Reflections. *Ilim* 42(4). 21-33.

Introduction

In recent years, the integration of modern technologies into educational settings has transformed the landscape of teaching and learning. As educators navigate an increasingly complex and diverse classroom environment, the need for innovative approaches to teacher preparation has become paramount. One area that warrants

particular attention is the use of advanced technologies, such as virtual reality (VR) and artificial intelligence (AI), in equipping prospective teachers with the necessary skills to address pressing issues, such as peer bullying.

In discussions on the functioning of contemporary and future schools, the issue of violence, bullying, and social exclusion is considered as one of the key threats to the proper psychosocial development of students. Peer bullying, a combination of persistent aggressive behaviors of varying intensity, poses a particular educational challenge. This phenomenon involves the systematic abuse of power by one student (or group of students) over another (Olweus & Limber, 2010). Peer bullying can be classified into four forms: (1) physical bullying, which refers to overt physical aggression, such as hitting or kicking; (2) verbal bullying, which includes verbal aggression, such as insults or name-calling; (3) social exclusion (relational bullying), which refers to manipulating social relationships to lower a student's social standing; and (4) cyberbullying, which involves aggressive actions using new technologies, such as publishing humiliating materials about a peer, harassing them with unwanted messages, or removing them from contact lists (Kowalski et al., 2010).

Research suggests that different forms of violence rarely occur in isolation; instead, they tend to coexist and overlap (Chmura-Rutkowska et al., 2022; Tokunaga, 2010). Bullying and cyberbullying are widely recognized as major psychosocial problems with substantial negative consequences. Numerous studies show that all students involved in bullying — whether victims, perpetrators, or witnesses — are exposed to various short- and long-term psychological, psychosomatic, and behavioral consequences (Nansel et al., 2001). Given the negative impacts associated with bullying and the fact that at least one in three young people report being bullied at school (UNESCO, 2019), it is not surprising that bullying is being treated as a serious social problem. As a result, there has been an increase in the number of wide-ranging initiatives aimed at creating prevention and intervention programs for educational institutions, with teachers playing a key role in anti-bullying efforts (Ttofi & Farrington, 2011).

Moreover, when violence becomes a widespread issue in a school, the entire school environment is considered dysfunctional. In extreme cases, where peer violence is regarded as an inevitable and permanent element of the school's functioning, a “bullying culture” can be identified (Unnever & Cornell, 2003), which significantly hinders any educational and preventive efforts. Therefore, in order to prevent such a situation, it is crucial to ensure the quality of the educational environment, which is only possible with a well-prepared school staff. By utilizing modern technological tools, teacher preparation programs can foster greater awareness and understanding of bullying dynamics while enhancing the candidates' confidence and competence in addressing such issues. This approach not only contributes to the professional growth of future educators but also promotes a safer and more supportive learning environment for students. As the implications of utilizing modern technologies in teacher preparation are

examined, it becomes essential to explore the potential benefits and challenges associated with their implementation. This article discusses the relevance of these technologies in preparing teachers to meet the demands of the profession, particularly regarding the critical issue of peer bullying. By reviewing current trends and research findings, this work aims to illuminate the path forward in enhancing teacher training programs through the thoughtful integration of innovative technological solutions.

The Importance of Proper Teacher Preparation and Continuous Professional Development

Through participation in various forms of teacher education, literature review, personal reflection, and consequently through the verification of knowledge forming their "own" pedagogical achievements, teachers can become initiators and participants of creative change within the school environment. Professional development is an integral part of a teacher's career growth and is most often associated with a deliberate, planned, and continuous process of lifelong education aimed at enhancing and modifying their professional competencies and qualifications, as well as the comprehensive development of their personality. This process begins from the moment of choosing the teaching profession, continues through pedagogical preparation, and spans the entire professional career. It can take three forms: (1) institutional training outside of school, (2) self-directed learning, and (3) in-school professional development (Kosiba, 2012). Institutional development outside of school encompasses formal training and professional development programs typically offered by educational institutions, universities, or dedicated organizations focused on teacher training. Such programs may include workshops, seminars, and courses designed to enhance teachers' pedagogical skills, subject matter expertise, and overall effectiveness in the classroom. These opportunities enable teachers to engage with current research, best practices, and innovative teaching strategies that can be applied in their teaching practice.

Another vital aspect of a teacher's professional growth is self-directed learning. This involves individual initiatives where teachers actively seek resources, such as books, online courses, articles, or educational podcasts, to enhance their knowledge and skills. Self-directed learning encourages teachers to take ownership of their professional development, allowing them to tailor their learning experiences to meet their specific needs and interests. This form of development is especially crucial in a rapidly changing educational landscape, where new methodologies and technologies continually emerge.

In addition, there is in-school professional development, which refers to ongoing training and collaborative learning opportunities that occur within the school setting. This often includes peer mentoring, team teaching, and professional learning communities where teachers can share experiences, strategies, and resources. In-school professional development fosters a culture of continuous improvement, encouraging teachers to learn from one another and collaborate on solutions to challenges they encounter in their classrooms. By participating in this type of development, teachers can

align their professional growth with the needs of their students and the goals of their educational institutions (Czyżewska et al., 2022).

Overall, the interplay between these three forms of professional development creates a comprehensive framework that supports teachers in their growth and adaptability throughout their careers. By investing in their development at every stage, teachers can better prepare themselves to address the diverse needs of their students and respond effectively to the evolving challenges within the education system.

Despite having formal education, teachers admit to lacking practical preparation. Many report that they acquire skills and experience independently, often relying on advice from older colleagues and their own intuition. The current state of affairs may be attributed to the dominance of theoretical preparation with insufficient practical application, both during teacher training in higher education and in professional development courses. Pedagogical preparation still prioritizes didactic and methodological competencies. As J. Niemiec (1998, p. 78) pointed out some time ago, the entire educational system remains primarily focused on achieving academic success, i.e., the realization of the teaching process, while other functions are addressed to a lesser extent. Consequently, teachers, particularly novice ones, are forced to rely on their intuition, often without adequate knowledge of the consequences or effectiveness of the methods they employ. Meanwhile, to respond effectively and prevent bullying, it is essential to have up-to-date knowledge about the issues at hand, a genuine interest in addressing them, a sense of responsibility for their resolution, and – most importantly – appropriate pedagogical competencies and skills. The enhancement and development of these competencies can be supported by well-designed teacher education programs and methods, applied both during initial teacher preparation and throughout their careers.

Preparation for School Bullying Prevention and Intervention

One of the main factors determining the effectiveness of a peer violence prevention program in schools is the quality of staff training (Gorsek & Cunningham, 2014; Lund et al., 2012). However, research on training programs for teachers and other school personnel in the areas of bullying prevention and intervention is relatively rare. The research indicates that most teachers need better training in this area (Fauzan & Sulaeman, 2024; Kennedy et al., 2012). Studies indicate a gap between recognizing specific manifestations of peer bullying and taking effective intervention measures. International studies also show that teachers have difficulty in detecting bullying, especially novice teachers, and rarely implement effective response strategies once it is identified (Demaray et al., 2013; Van Verseveld et al., 2021). In some cases, teachers are unaware of the presence of peer violence issues within their schools (Beaty & Alexeyev, 2008; Craig et al., 2011; Strohmeier & Noam, 2012; Khanolainen et al., 2021). Meanwhile, students express the expectation that teachers and educators support them, help resolve interpersonal conflicts, and intuitively sense “when something is wrong in the classroom” and “take action” (Wójcik et al., 2016). However, many

researchers note that educators struggle to differentiate between school bullying and peer conflict (Beaty & Alexeyev, 2008; Benitez et al., 2009; Newman et al., 2010; Strohmeier & Noam, 2012). In research conducted by Catherine P. Bradshaw, Tracy E. Waasdorp, and Lindsey M. O'Brennan (2013), teachers and educational support staff expressed interest in additional training on how to handle violence targeting sexual minorities.

Research conducted by Styron et al. (2016) reveals that candidates for teaching and principal positions were knowledgeable about the most prevalent types of cyberbullying and its effects on students. However, their awareness of the extent to which students engage in cyberbullying and the suitable responses to such behaviors was only moderate. From the systematic review conducted by Dawes et al. (2023) indicates that many preservice teachers struggle to define bullying according to its key characteristics. While most express concern about bullying, some regard it as a typical aspect of childhood development. Furthermore, preservice teachers tend to perceive various forms of bullying differently in terms of severity, often considering physical bullying to be the most serious. Finally, although the majority of preservice teachers recognized their duty to intervene as educators, many reported a lack of confidence in their ability to effectively do so. The existing research suggests that both individuals preparing to enter the teaching profession and those already working in the field require additional training and professional development in managing school bullying.

Studies also suggest that, although schools provide professional development in many educational areas, they often fail to address the topic of bullying (Bradshaw et al., 2013; Lund et al., 2012; Mahon et al., 2023). Emily M. Lund and colleagues (2012) found that 74% of surveyed school staff had undergone some form of bullying prevention training, such as during conferences, but it was not directly related to the school where they worked. The researchers noted that this situation could be problematic if the staff of a given school attends different trainings, as the quality and level of those trainings may vary. Different definitions (of aggression, violence, bullying) and/or different intervention models may be presented during such trainings. The situation becomes even more complicated when bullying is not defined in any of the school's prevention programs, which is a critical starting point for effectively addressing this issue in schools (Rigby, 2010). Therefore, if a unified stance is not adopted within a school, confusion among school staff may arise. However, when such alignment is achieved, teachers and other school staff report greater confidence in handling bullying situations (Benitez et al., 2009; Craig et al., 2011; Newman et al., 2010). It becomes clear what requires intervention, and if intervention guidelines are developed based on this, it is also clear how to intervene. For this reason, initial teacher training on bullying should include a definition that is adopted within the school as a foundation for action, to help identify bullying behaviors and increase teachers' confidence. Schools (or school districts) might consider providing in-school professional development on establishing anti-bullying policies in their institution (or

district) and developing proposed interventions. Targeted training for school staff can expand their knowledge and equip them with the skills needed to intervene in peer violence situations, use those skills, and enhance their sense of efficacy in working with students to prevent aggressive and violent behaviors (Duy, 2013; Howard et al., 2001).

In a study carried out in Poland by M. Gaska (2023) involving 100 teachers, 73% of the participants reported feeling inadequately prepared to manage aggressive behaviors among students. When asked to indicate how teacher preparation in this area should look, they offered various suggestions, including the necessity of organizing specialized courses and training that would allow teachers to address real-world problems they might encounter at work. Respondents also pointed to the need for a more practical approach, such as organizing workshops or collaborating with a psychologist or coach. More than half of the respondents (63%) stated that the school where they worked did not provide opportunities for professional development on the topic of peer violence prevention among students. One in four teachers reported participating in additional courses and training on this subject independently. M. Gaska (2023) also analyzed the content of available training and courses designed for teachers on managing students' aggressive behaviors. It was found that the analyzed training sessions addressed the topics of violence and aggressive behavior in a school context but differed in the scope of thematic blocks and training format. However, many topics within the content and training programs were repetitive across the various offerings. The author concluded that some training offerings address part of the needs signaled by teachers. Nevertheless, there is still a noticeable need for more practically oriented training sessions, as well as courses and workshops combined with practical exercises, to help teachers develop concrete strategies for action.

Based on the information presented above, the key elements of bullying prevention training are: (1) knowledge of bullying and its various forms, and the ability to accurately identify them, (2) an understanding of the social mechanisms of bullying, and (3) familiarity with appropriate intervention practices/methods, depending on the type of behavior/problem, and the ability to effectively implement them. Ideally, given the ongoing social changes and the emergence of new forms of aggressive behaviors, teachers should be systematically trained in this area.

The Use of Virtual Reality in the Professional Development of Teachers Regarding the Issue of Peer Bullying

The pervasive presence of broadband Internet significantly enhances opportunities for technology-based learning and provides teachers with access to numerous valuable resources and self-directed learning materials, as well as e-learning courses, should they choose to pursue them. However, these initiatives primarily focus on expanding, updating, and verifying knowledge. Considering the previously mentioned issues, it is crucial to create conditions for acquiring the necessary skills and competencies, which can be achieved through, among other methods, practical

experiences in school environments. However, given that many instances of violent behavior may not manifest during traditional practice sessions in classrooms or schools, relying on unprepared individuals to address these situations can lead to numerous negative consequences, particularly for students. Therefore, various active and problem-based methods, including educational games, are employed in teacher training and preparation to combat peer violence. Nevertheless, these methods do not guarantee the same experiences that can be gained from being in a specific situation. Conventional pedagogical approaches employed in classroom settings for teaching communication skills, such as modeling and role-playing, are often ineffective and constrained in their applicability. Nowadays, artificial intelligence (AI) is increasingly being integrated into education due to its growing social and pedagogical importance. Recent advancements in artificial intelligence have led to the creation of virtual pedagogical agents capable of simulating realistic conversations, offering new opportunities to impart essential communication skills (Schussler et al., 2017).

A significantly better opportunity is provided by utilizing virtual worlds (virtual reality, VR) and simulations. VR simulation is often associated with science fiction, futuristic business applications, and computer gaming systems. However, the use of VR for skill validation dates back to the 1960s with flight training simulations (Smith & Hamilton, 2015). Although VR simulations have primarily been employed in fields such as aviation and medicine, this technology is beginning to enter classrooms. These solutions offer realistic three-dimensional environments that provide advanced, authentic, engaging, and interactive educational experiences. For example, simulation games offer an alternative method for acquiring practical experience in a safe virtual environment that resembles the real world (Stavroulia, 2015; Stavroulia & Lanitis, 2017).

Simulations in classrooms can address the issue of lacking practical skills in teacher education and can bridge the gap between school practice and academic theory, enabling future teachers to engage with real-life scenarios that most would likely not encounter during traditional classroom practice. Furthermore, simulations create safe and controlled conditions. In a simulated environment, teachers will be required to act under pressure, make decisions regarding issues such as student behavior and classroom management, and recognize the consequences of their decisions from both the teacher's and students' perspectives. Another significant advantage of classroom simulations is that they allow for mistakes. Users learn from their errors and can replay the simulation to improve or alter their actions and effectiveness. Virtual environments can also be utilized for the continuous professional development of experienced teachers.

An example of such an innovative approach to enhancing teachers' preparation for effective prevention and intervention in bullying is the Bullying Classroom Check-Up (BCCU; Bradshaw et al., 2018), which is integrated with a mixed-reality simulator called TeachLive© (Dieker et al., 2008). The program aims to equip teachers with the skills to prevent, detect, and respond to manifestations of peer bullying. This program is

an adapted version of The Classroom Check-Up (CCU; Reinke, 2006; Reinke et al., 2011), originally developed as a coaching model to support teachers in more effectively managing their classrooms.

The study conducted by Schussler et al. (2017) investigates the effectiveness of a “virtual role-play” (VrP) tool designed to assist teacher candidates in responding to classroom bullying. This tool offers repeated opportunities for authentic practice conversations. The researchers hypothesized that engaging in these simulated dialogues would enhance the candidates’ communication skills, particularly their fluency in addressing bullying incidents. Results indicated that the repetitive practice enabled by VrP significantly improved candidates’ fluency by encouraging more precise word choices, decreasing their dependence on written notes, and enhancing their nonverbal communication skills.

Conclusions

Teacher candidates entering the profession can never be fully equipped to handle every possible situation they may face. However, the more opportunities they have to practice, particularly in scenarios that are crucial for student safety, such as bullying, the better prepared they will be to respond effectively and efficiently.

Considering the rapid development of new technologies and artificial intelligence, there is significant potential to design modern training solutions for future teachers. Utilizing innovative tools such as virtual reality-based simulations and virtual pedagogical agents can greatly enrich traditional training methods by providing practical experiences that are crucial for developing interpersonal skills and classroom management. The application of technology allows for the creation of realistic and interactive scenarios in which teachers can practice their responses to critical situations, such as bullying, in a safe environment. This approach not only enhances the effectiveness of training but also contributes to increasing teachers’ confidence in taking action during challenging circumstances.

Over two decades ago, O’Moore (2000) advocated for systematic reforms in teacher preparation for addressing bullying. Nevertheless, as highlighted by Dawes et al. (2023), additional research is needed to comprehend how programs have adapted to address this need. First, it is important to assess the extent to which programs have integrated bullying-related content and training opportunities into their often-overcrowded curricula. Second, identifying the most effective methods for training preservice teachers is crucial. The effectiveness of this approach for enhancing antibullying readiness among preservice teachers, however, remains uncertain. Third, it is essential to evaluate whether the effects of training during preparation programs persist over time as preservice teachers transition into classroom roles. It is important to note that antibullying training should not be confined solely to preparation programs; rather, ongoing professional development for teachers will likely be necessary. More research is required to delineate the most effective and efficient training sequences that

will equip preservice teachers with the foundational knowledge needed for skill development in practice.

Given the ongoing changes in society and the challenges that schools face, it is essential for teacher preparation programs to be flexible and adapted to contemporary realities. Integrating new technologies into the training process can help better prepare teachers to work in diverse and demanding educational settings. Therefore, investing in modern technology-based training solutions is vital for the future of teacher education and should be a priority within educational systems. Nevertheless, it should not be forgotten that the transition from acquiring knowledge to confidently applying it in everyday professional practice is a function of time and experience. Teachers are expected to be effective in their work with “real students” in the real world. Therefore, while the methods based on virtual reality offer many new possibilities, they should be regarded as supportive, not as exclusive or a replacement for in-class practice — at least for now.

Acknowledgements

The article was developed as part of an educational project funded by the Ministry of Science and Higher Education of the Republic of Kazakhstan via South Kazakhstan Pedagogical University named after Ozbekali Zhanibekov, Grant No. N26 awarded to Ewa Duda.

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Виртуальная реальность в профессиональном развитии учителей по вопросам издевательств со стороны сверстников: взгляды и мысли

Аннотация. Одним из основных факторов, определяющих эффективность противодействия насилию со стороны сверстников в школе, является качество подготовки и обучения персонала. Подготовка учителей, которые смогут эффективно бороться с проявлениями насилия со стороны сверстников, включая травлю, является непростой задачей. Различные исследования показывают, что учителя не чувствуют себя полностью готовыми к борьбе с проблемой травли, а также признают, что, несмотря на свое

образование, им не хватает практической подготовки. Несмотря на наличие различных курсов повышения квалификации, все еще существует потребность в обучении с более практическим уклоном и в курсах и мероприятиях, совмещенных с практикой, которые помогут учителям приобрести навыки вмешательства и разработать конкретные стратегии действий. Цель статьи — указать и обосновать необходимость более адекватной подготовки и профессионального развития учителей в области вмешательства и профилактики травли со стороны сверстников, и, прежде всего, предоставить им соответствующий опыт. Во-вторых, будет обсуждаться возможность использования для этой цели виртуальной реальности (VR), которая предлагает новые методы обучения навыкам.

Ключевые слова: искусственный интеллект, травля, насилие в школе, учителя, профессиональное развитие, виртуальная реальность.

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Құрдастар арасындағы әлімжеттік бойынша мұғалімнің кәсіби дамуындағы виртуалды шындық: көзқарастар мен пікірлер

Аңдатпа. Мектепте құрбыларының зорлық-зомбылығына қарсы іс-қимылдың тиімділігін анықтайтын негізгі факторлардың бірі қызметкерлерді дайындау және оқыту сапасы болып табылады. Құрбыларының зорлық-зомбылық, оның ішінде қорлау көріністерімен тиімді күресуге қабілетті мұғалімдерді дайындау оңай мәселе емес. Түрлі зерттеулер мұғалімдердің қорқыту мәселесімен күресуге толық дайын еместігін көрсетеді, сонымен қатар олар біліміне қарамастан практикалық дайындықтың жоқтығын мойындайды. Өртүрлі біліктілікті арттыру курстарының болуына қарамастан, әлі де практикалық бейімділікпен оқыту және мұғалімдерге араласу дағдыларын меңгеруге және әрекет етудің нақты стратегияларын әзірлеуге көмектесетін практикамен біріктірілген курстар мен іс-шараларға қажеттілік әлі де бар. Мақаланың мақсаты - құрбы-құрдастарының қорлауын болдырмау және алдын алу саласында мұғалімдерді неғұрлым барабар дайындау және кәсіби дамыту қажеттілігін көрсету және негіздеу, ең алдымен оларға тиісті тәжірибе беру. Екіншіден, оқыту дағдыларының жаңа әдістерін ұсынатын виртуалды шындықты (VR) осы мақсатта пайдалану мүмкіндігі талқыланады.

Кілт сөздер: жасанды интеллект, қорқыту, мектептегі зорлық-зомбылық, мұғалімдер, кәсіби даму, виртуалды шындық.