

Cultivating Empathy and Compassion Through Sim-Tech: A Reflective Action Research Study Enhancing Community-Based Interventions for Marginalised Groups

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Abstract

Preparing occupational therapy students to engage meaningfully with human rights and inclusion requires more than cognitive instruction. Traditional methods often fall short in fostering the emotional and relational skills essential to community-based practice. This educational action research explores how immersive and activity-based learning, grounded in critical reflection, can cultivate compassion and deepen students' understanding of marginalisation.

Guided by the Action Research Cycle, the Sim-Tech Workshop was delivered at the university's Immersive and Simulation Centre. Students engaged with 360-degree video scenarios portraying the lived experiences of marginalised individuals, followed by hands-on simulations such as gardening and activity planning. These experiences were supported by structured opportunities for reflection, enabling students to explore their emotional responses and develop practical ideas for inclusive interventions.

Through reflective dialogue and journalling, students reported increased emotional awareness and a deeper appreciation of the challenges faced by marginalised communities. Perspective-taking and experiential learning emerged as powerful tools for fostering empathy and compassion. Rather than focusing solely on outcomes, the workshop encouraged students to reflect on how their values and assumptions shape their professional identity.

This study highlights the value of reflective, immersive learning in occupational therapy education and its potential to support socially responsive, compassionate practice.

Keywords

Occupational therapy education, immersive learning, simulation-based teaching, reflective practice, educational action research

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Background

Education on human rights and inclusion is essential for equipping occupational therapy students with the core competencies required to address social inequalities affecting marginalised groups. Within occupational therapy education programmes, students are typically expected to engage with both theoretical frameworks and practical intervention strategies for working with marginalised communities. These groups may include individuals experiencing homelessness, displacement, or socioeconomic deprivation within the local context.

This paper explores the implementation of a simulation-based learning initiative designed to enhance the teaching and learning experience for students enrolled in the module Working with Communities, utilising a participatory action research approach. The Action Research Cycle represents a dynamic and iterative methodology that enables educators to systematically examine and refine their pedagogical practices. This approach comprises a continuous cycle of

identification, review and selection, implementation, evaluation, and reflection (Arnold and Norton, 2018). Each phase facilitates the ongoing development and optimisation of educational interventions, ensuring that teaching strategies are effectively adapted to meet the evolving needs of learners.

Identification

The teaching team conducted a review of previous practices and the common design and development of similar modules focused on community engagement, utilising the Framework

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of Module Design and Development (Sadiq and Zamir, 2014). These occupational therapy modules predominantly employed a problem-based learning (PBL) approach. The review process entailed an analysis of the pedagogical methods, module structure, and instructional strategies through document analysis, alongside feedback gathered from both the teaching team and students. This evaluative process led to the identification of two key issues.

1. The PBL approach did not adequately address the diverse needs of all students. The current delivery of the module employed a PBL methodology, incorporating lectures and group discussions within a classroom setting. As a learner-centred pedagogical strategy, PBL is designed to empower students by facilitating the application of theoretical knowledge to real-world scenarios. The module delivery followed the stages outlined in the PBL Framework, including comprehension of the problem scenario, identification of relevant facts and knowledge gaps, development of learning resources, acquisition of insights, and reflective practice (Chung, 2019). Although the majority of students appeared engaged during sessions, ensuring consistent participation across the cohort proved challenging. A notable limitation of the PBL format was the tendency for more dominant students to dominate discussions, which often resulted in unequal levels of participation and knowledge acquisition. This dynamic risked marginalising quieter students, thereby limiting their opportunities to contribute and benefit fully from the learning experience (Oo et al., 2020).

2. Engaging with marginalised groups within the community requires more than the acquisition of knowledge and practical skills; it also demands the development of compassion. However, the current iteration of this module does not sufficiently incorporate this essential dimension.

Review and selection

Compassion is widely recognised as a fundamental component of high-quality health care. However, traditional training for healthcare professionals has frequently neglected the cultivation of the humanistic dimensions of medical practice, such as compassion (Sinclair et al., 2021). Compassion may be conceptualised as occupying a middle ground between the objective and affective understanding of another's experience, which characterises empathy, and the more self-oriented, pity-based response associated with sympathy. It requires both emotional attunement and a proactive inclination to alleviate suffering (Sinclair et al., 2016).

The beneficial effects of compassion on patient outcomes and the well-being of healthcare professionals are well documented within the healthcare literature. It has been shown to reduce suffering, enhance well-being, and improve patients' perceptions of care quality (Malenfant et al., 2022; Papadopoulos and Ali, 2016). Compassion fosters trust and facilitates open communication, enabling clinicians to gain

deeper insight into service users' concerns and develop more responsive and supportive treatment plans (Barker et al., 2023; Powers Dirette, 2021). Furthermore, compassionate practice equips practitioners to manage emotionally complex situations more effectively, thereby reinforcing the therapeutic relationship (Malenfant et al., 2022). Compassionate care has also been linked to increased patient hope, a stronger sense of agency and responsibility for one's health, greater satisfaction, improved safety, and overall well-being (Tehrineshat et al., 2019). Moreover, compassion training not only fosters prosocial behaviour among healthcare professionals but also enhances positive affect and psychological resilience, thereby enabling more effective coping with stress (Peck, 2021). In addition, it has been found to strengthen the resilience of healthcare professionals themselves (Tehrineshat et al., 2019).

In the field of occupational therapy, the cultivation of a strong therapeutic alliance and the therapeutic use of self is fundamental to effective practice. This alliance is characterised by a deliberate, compassionate engagement between therapist and client, grounded in mutual trust, empathy, and respect. It functions not only as a framework for clinical intervention but also as a foundation for meaningful interpersonal connection. Mosey (1986) describes the conscious use of self as a purposeful and respectful interaction aimed at alleviating client anxieties, facilitating communication, and enabling clients to draw upon their internal resources. At the heart of these interactions lie the emotional capacities of empathy, commonly described as the ability to enter into another's experience while maintaining one's own identity; and compassion, defined as a deep, sympathetic concern for the suffering of others. These qualities are not merely emotional responses but are integral to the therapeutic process, enhancing the depth and effectiveness of the therapeutic relationship and contributing to improved client outcomes (Haertl, 2008). According to the Occupational Therapy Practice Framework (American Occupational Therapy Association, 2020), clients bring valuable insights from their lived experiences and play a key role in identifying their needs and goals. Practitioners must foster a compassionate and inclusive environment where clients feel safe to express themselves authentically. Compassion, expressed through empathy and meaningful action, underpins this approach. It involves recognising systemic barriers and applying cultural humility throughout the therapeutic process to support equitable and respectful practice.

Compassion, alongside theoretical knowledge and practical skills, is widely recognised as a fundamental component of occupational therapy education (Haertl, 2008). Traditionally, the pedagogical approach within this discipline has centred on the transmission of knowledge and the development of clinical competencies through didactic instruction. PBL promotes student-led engagement with real-world scenarios, with tutors facilitating collaborative

efforts to identify knowledge gaps and formulate solutions (Ghani et al., 2021). Nonetheless, PBL presents challenges, notably the risk of unequal participation, where more vocal students may dominate discussions, potentially limiting the involvement and learning of quieter peers (Oo et al., 2020). While PBL supports critical thinking and autonomy, it is not sufficient for effectively teaching compassion.

To address such challenges, the integration of simulation-based learning has emerged as a valuable complement to practice-based education in health professions (Bradley et al., 2013). Evidence suggests that clinical competencies developed through simulated environments are transferable to real-world practice, leading to improved patient care and health outcomes (McGaghie et al., 2011). Furthermore, a recent systematic review has highlighted the use of various pedagogical strategies, including simulation, to cultivate compassion among healthcare practitioners (Sinclair et al., 2021).

Reflecting on the evolving landscape of healthcare education, simulation-based learning emerged in this study as a purposeful and impactful teaching intervention. Notably, participants reported heightened levels of compassion after engaging with carefully designed scenarios that illuminated shared human experiences among healthcare professionals, including occupational therapists (Malenfant et al., 2022). Simulation has long held a valued place in occupational therapy education, offering a means of replicating real-world conditions. It allows students to interact with simulated objects, environments, and individuals in ways that closely mirror authentic clinical situations. This use of simulation in teaching and learning enhances students' comprehension by offering immersive experiences that closely replicate the complexities and nuances of real-world practice (Chernikova et al., 2020). Simulation-based learning is particularly effective in medical and healthcare education as it (1) supports the development of technical skills through practice; (2) provides expert scaffolding to guide learning; (3) situates learning within meaningful, contextualised scenarios; and (4) incorporates the emotional and affective dimensions of professional practice (Kneebone, 2005).

Simulation technologies enable students to engage in practice environments that closely mirror real-world situations. Within healthcare education, commonly utilised modalities include mannequin-based simulation, virtual reality (VR), augmented reality, and other immersive technologies (Grant et al., 2021; Pears et al., 2020). These tools increasingly blur the boundaries between physical and virtual realms, fostering a sense of immersion and enhancing the realism of simulated experiences (Suh and Prophet, 2018). Recent studies have demonstrated that simulation-based training is particularly effective when integrated into real-life scenario problem-solving, thereby reinforcing the application of theoretical knowledge in practical contexts (Murphy et al., 2011).

Simulation-based learning represents a pedagogical approach that enhances technical competence, contextualises knowledge acquisition, and integrates affective dimensions, making it particularly effective within medical and healthcare education. The multimodal nature of simulation, engaging visual, auditory, and tactile pathways, elicits a more active and immersive response from learners. Incorporating psychomotor elements alongside cognitive processes has been shown to significantly enhance student learning outcomes (Steadman et al., 2006). Moreover, simulation-based learning facilitates a dynamic interplay between emotional and cognitive factors, supporting the gradual development of self-confidence within collaborative, peer-supported environments (Murphy et al., 2011). This approach fosters deeper understanding and more effective skill acquisition. The inclusion of emotional and affective components in the learning process also nurtures the development of compassion, contributing to improved learner performance and greater mastery of educational objectives.

Implementation

The objective of this action research project was to integrate a simulation-based learning approach within the module curriculum. This initiative involved the design and delivery of a full-day, laboratory-based workshop employing simulation technology (Sim-Tech). Sim-Tech facilitates the creation of a practice environment that closely mirrors real-world scenarios, thereby enhancing the authenticity of the learning experience.

The overarching aim of the project was to develop a Sim-Tech-based educational intervention that harnesses immersive technologies to enable students to demonstrate both compassion and competence in designing interventions for marginalised communities. To this end, a full-day Sim-Tech Workshop was developed to support learners in cultivating the requisite knowledge and skills for implementing activity-based interventions effectively. Furthermore, the workshop sought to foster compassion and reflexivity in students' engagement with marginalised populations during simulated scenarios.

The workshop was conducted within the university's Simulation and Immersive Learning Centre, which is equipped with a comprehensive suite of tools and technologies designed to support the creation and delivery of 360-degree immersive content. This facility enables participants to engage fully with virtual environments, offering a dynamic and multidimensional perspective that enhances experiential learning.

The learning outcomes of this Sim-Tech Workshop include developing an appreciation for the lived experiences of various community groups, such as displaced individuals, people experiencing homelessness, and those living with chronic fatigue syndrome. In addition, participants will be able to describe and reflect upon

activity-based interventions aimed at addressing occupational injustice among marginalised populations.

Part I of the workshop utilised 360-degree immersive narrative video stories to provide learners with a vivid and empathetic understanding of the needs of individuals from marginalised groups. Students were divided into three groups, each engaging with one of the following scenarios:

1. A self-narrated account by a child refugee, depicting the experience of leaving their home country and the journey undertaken during displacement.
2. A homeless couple being interviewed by a journalist on the street, offering insight into their daily realities and social challenges.
3. An individual with a chronic disability, describing their struggle with chronic fatigue while navigating life in a local urban setting.

Part II also employed immersive technology to create simulated environments in which activity-based simulation sessions were conducted, corresponding to the three personas introduced in Part I. Common activity-based interventions were implemented within the Sim-Tech setting to replicate real-life contexts:

- A gardening activity, using seeds and pots in a simulated public garden, was designed for the refugee scenario.
- A grass weaving activity, conducted in a simulated public space, was tailored for individuals experiencing homelessness.
- An activity diary exercise, situated in a simulated community activity centre, was developed for individuals living with chronic disabilities and fatigue.

Learners were supported in exploring the practical needs of these groups and encouraged to generate ideas for planning and designing community-based interventions that promote occupational justice for marginalised populations.

Evaluation

The Sim-Tech Workshop was coordinated by a lead facilitator and involved four tutors and a cohort of 23 occupational therapy students. The participatory nature of this action research highlights the principle that experience can serve as a foundation for knowledge, and that experiential learning constitutes a valid form of understanding capable of influencing teaching and learning practices (Baum et al., 2006).

The evaluation of this educational action research was embedded within a reflective cycle, consistent with the principles of practitioner inquiry aimed at enhancing teaching and learning. Rather than employing formal research instruments, the process drew on reflective documentation gathered through

participation, observation, and critical self-reflection. Feedback was collected through routine teaching evaluations, which served as a reflective tool to inform the ongoing development of the workshop. These evaluations included both open and closed questions designed to prompt student reflection on their learning experience. Specifically, students were invited to respond to the following: (1) What did you find most valuable about the session? (2) What did you learn or take away from the session? (3) Any reflections? (4) How would you rate your overall experience of the simulation session? and (5) Do you have any other comments or suggestions for future sessions? These responses were used to support reflective analysis and guide iterative improvements to the pedagogical approach.

Following a review of relevant literature and available resources, 360-degree videos depicting the real-life experiences of refugees, individuals experiencing homelessness, and those living with chronic fatigue syndrome were selected. These were intended to deepen students' understanding of marginalised populations and cultivate compassion. The videos successfully elicited emotional responses from the audience. The use of immersive technology within the immersive suite enhanced the authenticity of the narratives, creating the impression that the individuals featured were addressing the audience directly within their respective contexts.

The students exhibited both cognitive empathy, defined as the capacity to adopt another's perspective in order to intellectually comprehend their mental state (Spaulding, 2017), and emotional empathy, characterised by affective resonance with the experiences portrayed. Emotional empathy entails the vicarious sharing of another's emotional state (Smith, 2006). Through engagement with the immersive video, students demonstrated an enhanced understanding of the needs and lived experiences of marginalised groups. Emotional resonance, a key component of empathy, involves affective alignment with others' emotions; imagining how another person feels typically evokes sympathy, whereas imagining oneself in the same situation may elicit personal distress, such as anxiety or discomfort (Decety and Meyer, 2008). Participants reported feeling deeply moved and saddened by the immersive content, perceiving the scenarios depicted as unjust and inequitable. The 360-degree experience appeared to facilitate perspective-taking and enabled students to emotionally resonate with the subjects' expressions of joy, sorrow, fear, and pain.

The second part of the Sim-Tech Workshop focused on the simulation of three activity-based interventions: gardening, self-management through the use of an activity diary, and grass weaving. The practical engagement with these simulated activities was perceived by participants as particularly meaningful and inclusive. It provided valuable insights into the implementation of activity-based interventions and enhanced students' understanding of how to adapt such activities to meet the diverse needs of different population groups.

Reflective synthesis

Anonymised responses gathered through standard workshop evaluations revealed depth and consistency in the feedback. Although originally collected as part of routine educational procedures, the evaluations provided valuable insights into participants' experiences. The combination of closed and open-ended questions offered a rich blend of quantitative and qualitative perspectives, helping to illuminate the perceived impact of the session.

Reviewing the anonymised evaluation data highlighted the strength of the students' responses. A significant 88.24% strongly agreed that the workshop had deepened their understanding of the needs of marginalised people, which resonated with the workshop's intended purpose. Similarly, 82.35% strongly agreed that their perceived competence in delivering activity-based interventions had improved, and 88.24% felt that their compassion in working with marginalised communities had been enhanced. These figures suggest that the workshop achieved more than just knowledge transfer; it fostered a sense of empathy and human connection. This reinforces the belief that experiential learning, when thoughtfully designed, can truly transform not only what students know, but how they feel and act in the world.

Analysis of the qualitative feedback revealed three key themes. The first centred on the development of community-based intervention skills, with students describing how the experience fostered empathy, understanding, and confidence. The second theme was related to the use of simulation technology, which was consistently described as powerful and engaging. The immersive nature of the learning environment appeared to promote deeper emotional and cognitive involvement than traditional methods. The final theme highlighted the value of incorporating activity into experiential learning. Participants appreciated the opportunity to engage in practical, hands-on tasks, which were described as interactive, meaningful, and inclusive.

Taken together, these themes and quantitative findings reinforce the value of designing learning experiences that are both emotionally resonant and practically grounded. The convergence of feedback across different question types supports the credibility of these insights and affirms the importance of experiential education in preparing students to work compassionately and competently with marginalised communities.

Ethical considerations

This work is based solely on the author's personal reflections and observations of their own teaching practice. No data were collected from or about students, and no identifiable information is included in the analysis. The reflections were recorded for the purpose of professional development and

scholarly inquiry. This study falls within the scope of educational action research aimed at improving teaching practices. This type of research is typically considered a form of professional development or quality enhancement and is often classified as part of routine educational practice. Ethical approval for this study was granted by the Research Ethics Committee at Swansea University (Reference Number: 6 2025 12957 13706).

Discussion

Empathy

Teaching empathy and compassion presents significant challenges when approached through didactic or even problem-based methods. The use of immersive video narratives engages multiple senses, thereby creating a powerful and affective learning experience that fosters both empathy and compassion (Murphy et al., 2011). Evidence of empathetic engagement is reflected in participants' reflections on their learning, particularly in their enhanced understanding of diverse communities and conditions. Frequent references to gaining deeper insight and adopting a more open-minded perspective indicate a sincere effort to adopt the viewpoints of others and appreciate their distinct experiences and needs.

Participants reported experiencing a significant emotional impact during their interactions with marginalised individuals in the immersive simulation. However, while emotional sharing can foster connection, it may also lead to personal distress and does not necessarily promote a commitment to justice for all (Decety and Yoder, 2016). Reflections from the Sim-Tech Workshop suggest that an emphasis on perspective-taking and cognitive reasoning may be more effective in eliciting empathy than focusing solely on emotional engagement. This approach is particularly pertinent in clinical contexts, where understanding the lived realities of deprivation among marginalised populations is essential for sound decision-making. The phenomenon of transference—the unconscious redirection of feelings from one individual to another based on past experiences—can obscure judgement and introduce bias. Empirical evidence indicates that cognitive empathy and empathic concern, rather than emotional empathy alone, are stronger predictors of sensitivity to injustice (Decety and Yoder, 2016). Cognitive empathy, which entails understanding another's perspective and emotional state, supports more objective, equitable, and ethically grounded decision-making.

Emphasising the misfortunes of others can, at times, provoke an excessive or misplaced sense of sympathy. When such sympathy is directed towards individuals or groups experiencing stigmatised conditions, it may inadvertently reinforce negative outcomes, including enacted stigma and discrimination (Blaine et al., 1995). This occurs because sympathy, particularly when rooted in pity, can perpetuate a

sense of otherness rather than fostering genuine understanding or solidarity. Consequently, within the context of a Sim-Tech Workshop, it is essential to strike a balance between emotional engagement and cognitive empathy. Such a balance ensures that participants cultivate a nuanced and accurate comprehension of the challenges faced by marginalised individuals, thereby supporting more equitable, respectful, and effective interventions.

From empathy to compassion

Compassion was evident in participants' reflections, particularly in their emphasis on how they might support and advocate for marginalised communities. This was demonstrated through their enthusiasm for sessions that incorporated practical, activity-based components aimed at addressing real-world needs. Such interventions are powerful vehicles for cultivating compassion, as they integrate understanding, communication, and action. Compassion, in this context, involves being moved by the structural and contextual injustices experienced by others, coupled with a motivation to effect meaningful change (Howick et al., 2018). The primary aim of activity-based interventions is to empower individuals, rather than merely enhance functional outcomes. The workshop commenced with an exploration of what it means to live with a disadvantaged condition, which served an essential foundation for effective intervention planning. This initial step enabled participants to appreciate the depth and complexity of the challenges faced by marginalised individuals. Communicating this understanding plays a vital role in alleviating service users' anxiety and reinforcing that their voices have been heard. This process is crucial for building trust and rapport between practitioners and service users. Ultimately, the delivery of tailored, activity-based occupational therapy interventions, grounded in this shared understanding, maximises therapeutic outcomes by ensuring relevance, responsiveness, and respect for individual needs (McNally et al., 2019).

Fundamentally, this workshop effectively fostered compassion through the integration of empathy, person-centredness, and proactive engagement aimed at supporting marginalised communities. By prioritising an understanding of the lived experiences of these individuals, facilitating effective communication, and undertaking purposeful action, participants cultivated a comprehensive strategy for addressing occupational injustice. This holistic approach not only empowers those affected but also nurtures a deeper sense of compassion and a sustained commitment to advocacy and systemic change.

Using technology in simulation-based learning

Simulation-based learning presents a number of notable advantages. It enables students to acquire knowledge through experiential means, thereby enhancing both their

comprehension and retention of complex concepts (Hung and Chen, 2018). Engaging in practical, hands-on activities facilitates a deeper understanding of theoretical frameworks. Moreover, immersive technologies, in particular, can vividly depict the realities of individuals living in vulnerable circumstances within intricate systems or processes that are otherwise challenging to observe directly (Dede et al., 1999). Nonetheless, this pedagogical approach is not without its limitations. Establishing the necessary infrastructure for simulation-based learning can be both technically demanding and resource-intensive. Furthermore, navigating the legal and licensing complexities associated with simulation technologies, such as securing appropriate permissions for the use of 360-degree videos on streaming platforms, requires careful institutional oversight to ensure compliance with intellectual property regulations.

Potentials in using immersive technology in teaching community-based practice

Immersive technologies hold considerable promise for the teaching of community-based occupational therapy practice. The development of 360-degree VR field trips to remote or hazardous environments offers students rich educational experiences unbounded by physical limitations. Virtual internships, work-based simulations, and placements within virtual environments enable learners to acquire practical skills and insights into prospective career paths within a controlled and low-risk setting. The incorporation of multisensory feedback, including olfactory technologies, further enhances the realism and impact of VR simulations, contributing to more memorable and authentic learning experiences (Dede et al., 1999). Additionally, interactive storytelling and digital case libraries can transform traditional case studies into dynamic narratives, allowing students to explore diverse perspectives, intervention strategies, and potential outcomes in a more engaging and reflective manner.

Conclusion

In conclusion, the Sim-Tech Workshop, framed as an educational action research initiative, meaningfully enriched participants' engagement with community-based practice through the cultivation of empathy, compassion, and practical capabilities. Grounded in reflective learning, the use of immersive simulation technologies offered a dynamic and experiential approach that proved more engaging and impactful than conventional teaching methods. The incorporation of hands-on activities within the simulations further deepened the learning experience, making it interactive, inclusive, and personally meaningful. Overall, the workshop fostered enhanced confidence, insight, and the ability to

apply theoretical understanding to real-world contexts, highlighting the value of reflective, practice-oriented pedagogy in professional education.

Key Findings

- Immersive technologies enhance the development of empathy and compassion among occupational therapy students.
- Activity-based simulations effectively strengthen practical competencies relevant to community-based interventions.
- The combination of perspective-taking, reflective reasoning, and emotional engagement serves as a powerful catalyst for eliciting empathy and compassion.

What the study has added

This educational action research has illustrated that immersive simulation and activity-based learning, underpinned by reflective practice, can meaningfully cultivate empathy and compassion, thereby deepening participants' understanding of and commitment to supporting marginalised communities within community-based settings.

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Research ethics

Ethical approval was granted by the Research Ethics Committee at Swansea University (Reference Number: 6 2025 12957 13706).

Consent statement

Not applicable.

Patient and public involvement data

During the development, progress, and reporting of the submitted research, Patient and Public Involvement in the research was not included at any stage of the research.

Declaration of conflicting interests

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