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Escape Rooms Enhance Teamwork and Professional Values Learning: High Satisfaction Among Generation Z Nursing Students

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Abstract

Understanding the needs and expectations of new generations entering higher education presents ongoing challenges. Generation Z has grown up surrounded by digital technology, shaping their attention and entertainment habits. Therefore, education must evolve to align with these changing learner profiles. Incorporating a hyper-cognitive framework could meet student expectations and create a more engaging learning experience for emerging generations. To assess nursing students' satisfaction with the use of escape rooms in supporting the development of professional values, including teamwork, decision-making, and information sharing. A quantitative cross-sectional questionnaire was conducted to evaluate participant satisfaction after taking part in the escape room activity. The study examined the educational benefits of using escape rooms as a teaching approach for modern nursing students. The idea was that offering interactive "games" promoting collaboration would strengthen peer connections and relationships among students new to nursing education. Escape rooms foster shared goals and teamwork, making them a valuable tool for enhancing cooperation and interdependence in nursing training. Among 45 student nurses, 100% (n=45) reported feeling part of a team, 98% (n=44) described the experience as positive, and only 2% (n=1) found it stressful. Escape rooms represent an innovative, active learning strategy that immerses students in teamwork and problem-solving activities. Participants responded positively regarding teamwork, decision-making, communication, and overall enjoyment. Findings suggest that this approach can strengthen core nursing competencies, teamwork, and professionalism in collaborative educational settings.

Keywords: Nursing students, Escape rooms, Nursing education

Introduction

Engaging Generation Z students has become a significant focus for higher education instructors [1, 2]. Students who have grown up in a world of constant technology and immediate access to information often show different patterns of focus and motivation [1, 3]. Generation Z, born between 1997 and 2010, has developed distinct learning preferences and expectations compared to previous cohorts [4, 5]. Educators must adapt teaching practices to effectively connect with this group [6–8] and design appealing environments that motivate them to learn. For nursing educators, this involves using simulation and experiential learning to translate theoretical knowledge into practical skills [6, 9].

Nurse education continues to evolve to meet professional standards and accountability expectations. Teaching innovations—such as digital tools, virtual reality, and simulation—are now integral in higher education [10, 11]. While these techniques have clear advantages, they can often be completed independently. Generation Z's independence, enhanced by social media and technology, may come at the cost of underdeveloped social and relational abilities [12, 13], both critical for nursing [14, 15]. Nursing programs typically include students from various age groups; although this study focused on younger learners who may struggle with lecture-based learning, escape rooms can engage students from all generations [16].

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The intent was not to exclude Gen X or Y but to identify strategies that help Gen Z collaborate with peers across age groups. Research supports that learning environments emphasizing interdependence help develop teamwork, communication, and problem-solving toward shared objectives [17, 18], preparing students for the cooperative nature of nursing. Escape rooms, by design, encourage collaboration as participants work together toward common goals [19]. Literature suggests educators have successfully used escape room-based problem-solving to engage learners, stimulate critical thinking, and promote collaborative instruction [20]. These games also align with constructivist learning principles, enhancing nursing students' ability to apply theory in practice and ultimately improving patient outcomes [21]. Exploring this innovative teaching model helps educators better prepare future nurses for the dynamic and teamwork-driven healthcare environment [18].

Materials and Methods

Research aims: To assess the satisfaction of nursing students participating in escape room activities designed to enhance professional values, including teamwork, decision-making, and information sharing.

Sample of participants

The students who took part in the escape room project were progressing from a Higher National Certificate (HNC) programme. This qualification commonly serves as an entry route into Higher Education for younger learners, particularly as the Scottish Widening Access Programme (SWAP) is unavailable to recent school graduates. Participants entered university from four separate Further Education Colleges, but had all completed the same HNC curriculum during the articulation year. Although no specific age limits were imposed, the available nursing pathways within Further Education suggested that most students belonged to a younger demographic.

The number of students progressing into the second year of Higher Education differs each year. A five-year analysis revealed an average of 39.2 students annually, which was deemed suitable for this pilot investigation. In 2023, 45 students received conditional offers for direct admission to year two of either the BSc (Hons) Adult Nursing or BSc (Hons) Mental Health Nursing programmes. The primary intention behind entering a Higher Education setting was to strengthen theoretical knowledge, clinical ability, and professional values necessary for advancing within nursing education and meeting progression criteria.

Methodology

A quantitative cross-sectional survey was selected to capture student satisfaction at a single time point. This approach was efficient, economical, and suitable for producing clear statistical outcomes. Although it provides only a single snapshot, the design minimized variation among participants and reduced the influence of demographic differences within the cohort.

The survey was an adapted version of the Readiness for Interprofessional Learning Scale (RIPLS) [22], which evaluates four main dimensions related to teamwork, collaboration, and shared learning—factors central to this study's purpose. While RIPLS was originally designed for interprofessional education, its focus on professional ethics and interdependence made it well-suited for this context. It is widely used in undergraduate healthcare programmes and has been validated as an accurate measure of student preparedness for shared and cooperative learning [23, 24].

To enhance validity, clarity, and reliability, the modified questionnaire underwent pilot testing with five academic staff members involved in nursing education at the same academic level. Feedback on all 20 questions—regarding relevance, structure, and clarity—was gathered, and no revisions were found necessary.

Participants in both the Adult and Mental Health Nursing BSc (Hons) programmes completed the escape room activity on their first day at the university in May 2023. Before the session, they were informed that anonymous paper-based questionnaires were available in a designated room and could be left on a specific table upon completion. Paper copies were chosen since digital access was restricted in the simulation areas.

A single round of data collection was undertaken to record student perceptions regarding teamwork, decision-making, and communication during the exercise. The 20-question survey covered four sections: teamwork, decision-making, information sharing, and overall impressions. Data were gathered using a Likert scale [23], offering structured and easily comparable results, though possible response bias (e.g., central tendency) was acknowledged [25, 26]. Closed-ended items were included to reduce stress about "right or wrong" answers [27], while a final open-ended item allowed students to provide optional comments [28].

Data analysis

Responses were transferred into Excel and examined using descriptive statistics based on central tendency [29]. The mean identified overall trends, while the mode indicated the most common response. Analyzing both allowed a comprehensive view of participant feedback, reflecting general patterns and distribution.

Framework

Escape room activity

Escape rooms were introduced as an educational tool designed to promote teamwork, build confidence, and establish peer connections prior to engagement in clinical simulations [30,31]. Immersing participants in this interactive context was intended to encourage group coordination, critical decision-making, effective communication, and transparent information exchange—all essential for collaborative performance and nursing competence.

The activity's phases **(Figure 1)** were carried out simultaneously across two campuses of the University of the West of Scotland, under the supervision of trained facilitators. Each facilitator received standardized training from the researcher to guarantee uniform implementation, and identical instructional guidelines were used in every escape room setup across both locations.

Figure 1. Phases of activity

Pre-Information

Prior to the activity, participants were provided with Participant Information Sheets (PIS) that explained the objectives of the escape room and outlined the research purpose to ensure informed consent. The forms clearly stated that students could decline participation in either the study or the activity without any effect on their academic progress. Consent forms were signed before the session, and those who opted out were given alternative learning materials. Completing the post-session paper questionnaire was fully voluntary, and non-completion did not influence students' learning experience. To emphasize voluntary participation, students were invited to ask questions and discuss their understanding of the PIS, ensuring informed and autonomous decision-making and reducing the likelihood of coercion [32].

Pre-Briefing

A preparatory session was held to address possible misconceptions about escape rooms and ensure participants' psychological comfort. Although no formal framework was applied, the briefing focused on the context and aims of the activity. Through open questioning, students explored their roles, expectations, and collective learning goals. Factors such as previous experience and stress levels were also discussed. Among the 45 participants, only three reported prior experience with escape rooms, all within recreational contexts.

Escape room design

A total of five escape rooms were created in simulation labs, each themed around a medical scenario: asthma, diabetes, stroke, cardiac arrest, and A–E patient assessment **(Figure 2)**. To reduce expenditure, simple resources—whiteboards, labels, and standard clinical tools—were used. Each room included a written scenario and a sequence of problem-solving challenges requiring participants to identify symptoms, select appropriate treatments, and

determine correct equipment use. Trained facilitators provided direction and ensured completion accuracy using standardized answer keys.
Students were not physically locked in the rooms; instead, they completed timed tasks to sustain engagement and prompt rapid decision-making. Groups of five to six students worked together under the guidance of one facilitator per session.

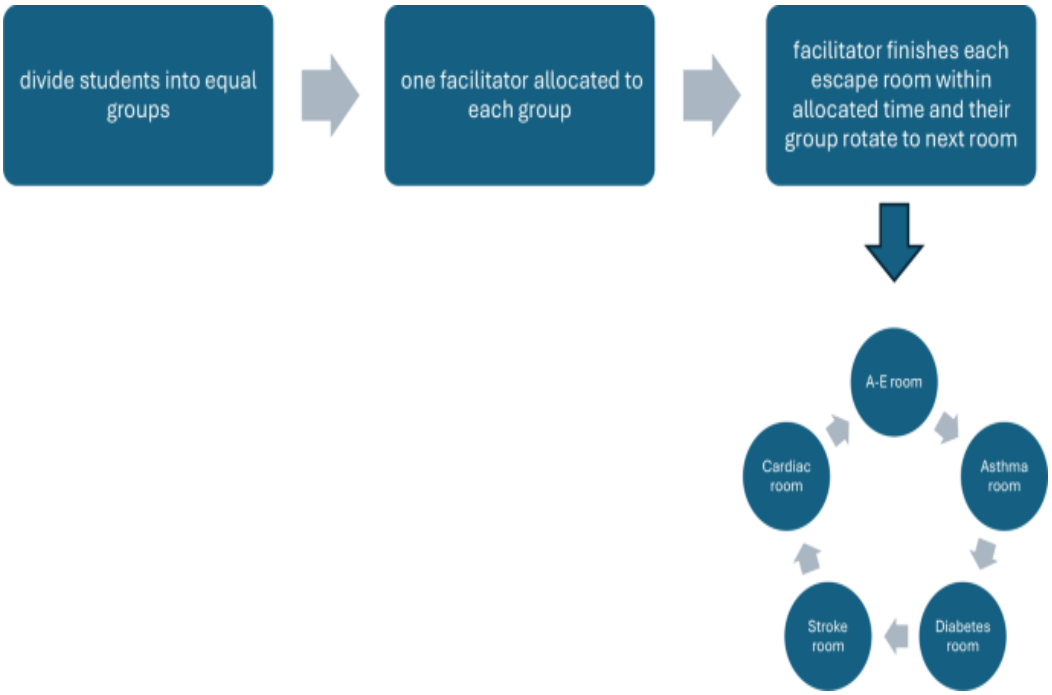

Figure 2. Stages for delivery of escape rooms

Debrief
Following completion of the activity, participants joined a reflective debrief led jointly by facilitators and students. The "Debriefing with Good Judgement" approach was applied, encouraging participants to examine their reasoning, assumptions, and thought processes [22]. Using a whiteboard exercise labeled "Triumphs and Challenges," students shared immediate reflections, while facilitators summarized themes, emphasized learning outcomes, and discussed key takeaway points. The debrief promoted open reflection, teamwork, and consolidation of learning. Because the discussion evolved organically, outcomes were unpredictable; however, framing reflection under the two headings supported balanced feedback and minimized pressure to express specific views.

Questionnaires
Although no particular themes dominated the debrief, the key "take-home messages" collectively agreed upon by students were summarized for context. These discussions may have influenced responses on the post-activity questionnaire, but such effects are considered natural given the variability of participant experiences. Conversely, because the questionnaire was completed anonymously, it may have allowed participants to express opinions more freely than in the group debrief.

Results and Discussion

Demographics
All participants had previously attended Further Education (FE) colleges across Scotland and earned A or B grades in the HNC Healthcare Practice graded unit, enabling articulation into the second year of the UWS BSc Adult Nursing Programme. The entire group of 45 students took part in the escape room activity during their first day at university in 2023. Of these, 43 were female and two were male. By generational grouping, 27 students were classified as Generation Z, 17 as Millennials, and one as Generation X. The mean age of participants was 29.1 years, placing it slightly above the upper range for Generation Z. Thus, 57.8% of participants were Generation Z, 37.8% Millennials, and 4.4% Generation X.
Students' previous college locations were geographically diverse, including Lanarkshire (17 students), Ayrshire (9), Renfrewshire (8), and Dumfries (2). A detailed summary of participant demographics is presented in **Table 1**.

Table 1. Demographic Data.

Characteristic	Subcategory	n	%
Gender	Female	43	95
	Male	2	5
Mean Age	—	29 years old	—
Generation	Gen Z	27	58
	Millennials	17	38
	Gen X	1	4
Location	LK	17	38
	Ayr	9	20
	Ren	8	18
	Dum	2	4
	Other	9	20

Key: LK = Lanarkshire, Ayr = Ayrshire, Ren = Renfrewshire, Dum = Dumfries, Other = not disclosed.

Questionnaires

The questionnaire outcomes **(Table 2)** demonstrated a clear positive influence on teamwork. The strongest responses came from the statement regarding a sense of belonging, with 100% of students confirming agreement. Similarly, 98% of participants agreed that they benefited from shared learning and felt heard during the activity. Responses concerning improvements in group effectiveness indicated that all students (100%) believed their peers enhanced their performance throughout the session. Additionally, 98% agreed that the exercises promoted professional values such as mutual trust and respect, while 91% found the escape room activities suitable for their current educational stage.

Regarding problem-solving, 89% of nursing students reported positive experiences and enjoyment during the escape room sessions. On aspects of fun and difficulty, 94% considered the activities enjoyable, and 100% confirmed that they were not overly difficult, with only 2% noting slight stress.

The open-ended comments section offered deeper insight into students' experiences, with remarks such as *"great team building," "a fantastic start to the EPLE module,"* and *"really enjoyed this."*

During the debrief, it became evident that new relationships and trust had developed among students who had not previously interacted, just three hours before the activity. The escape room encouraged these new social connections, resulting in 93% of participants expressing interest in having similar exercises in other modules. Looking ahead, reviewing the structure of future escape room activities may ensure that the level of knowledge required remains appropriate for each stage of study.

Table 2. Questionnaire Results.

Questions	Corresponding themes	Strongly agree/agree n (%)	Strongly disagree/disagree n (%)
1	Collaborating with fellow student nurses enhanced my effectiveness in an escape room setting.	Teamwork, decision making and sharing information	45 (100%)
2	Student nurses must exhibit trust and respect toward one another to operate successfully in escape rooms.	Teamwork and decision making	44 (98%)
3	Exchanging knowledge assisted me in recognizing my personal constraints during the escape rooms.	Teamwork and sharing information	44 (98%)
4	I sensed that my input was heard during the escape room exercise.	Teamwork, decision making and sharing information	44 (98%)
5	I experienced a sense of belonging to a group in the escape room exercise.	Teamwork	45 (100%)
6	I appreciated the variety of tasks incorporated in the escape rooms.	Experience	42 (93%)
7	The tasks in the escape rooms aligned well with my current level of education.	Experience	41 (91%)
8	I found pleasure in the problem-solving tasks inside the escape rooms.	Experience	40 (89%)
9	The oversight provided for the escape rooms was sufficient.	Experience	44 (98%)
10	I received adequate details to comprehend the goals of the escape rooms.	Experience	44 (98%)

11	The duration allocated for each escape room was sufficient.	Experience	44 (98%)
12	I desired additional assistance during the escape rooms.	Experience	0
13	The escape rooms induced stress.	Experience	1 (2%)
14	The escape rooms proved excessively difficult.	Experience	0
15	The escape rooms contributed to fostering team cohesion.	Team building	44 (98%)
16	I found the escape rooms enjoyable.	Experience	42 (94%)
17	I would support the inclusion of escape room activities in additional modules.	Experience	42 (93%)

This discussion interprets the results, emphasizing participant satisfaction and the value of escape rooms in promoting teamwork, decision-making, and knowledge exchange among nursing students.

Themes

Analysis of this pilot focused on four themes: teamwork, decision-making, information sharing, and overall activity experience. Each theme corresponded to specific questionnaire items, directly linked to the research aim and aligned with the data collection framework.

Generational similarities and differences

The diverse age range of participants provided an interesting context for interpretation, reflecting learning preferences across Generations Z, Y (Millennials), and X. Research suggests that Generations Y and Z share overlapping needs, particularly for guidance and leadership, though notable differences remain in their communication and work values [33]. Despite these differences, this pilot illustrates that value-driven learning tools like escape rooms enhance affective learning and foster students' professional identity [34].

With an average age of 29.1 years, the group comprised individuals from all three generations, each contributing unique learning tendencies. Generation Z, raised in digital and interactive settings, often favors collaborative, experiential approaches such as escape rooms [12]. Meanwhile, Millennials and Generation X students may prefer structured and team-based learning environments. This generational diversity underscores the need for adaptable teaching designs that address different learning styles while promoting cooperation and professional growth.

Escape rooms inherently bridge these generational divides by offering dynamic, cooperative experiences that enhance skill development across various learner types. However, defining clear objectives remains crucial so that each activity aligns with desired outcomes for students and educators. Teaching models that prioritize teamwork may structure activities in stages to build interdependence, while more linear approaches can emphasize leadership and task delegation [35].

Participant anxiety

Unexpectedly, participants reported no notable stress, contradicting common perceptions that simulation learning generates anxiety [36–38]. Anticipating that the novel escape room setup might provoke nervousness, organizers implemented thorough pre-briefing and debriefing sessions. The absence of stress reported by participants highlights the benefit of a well-structured, supportive environment for this type of educational innovation.

Prior studies have shown that tasks with time limits and problem-solving components often trigger anxiety; however, the supportive nature of this activity seemed to minimize that effect. Evidence also indicates that experiential learning methods—when properly facilitated—can combine challenge with psychological safety, allowing learners to focus on teamwork rather than individual performance [30].

These findings challenge the assumption that time-pressured educational scenarios inherently cause distress. Instead, they emphasize the importance of thoughtful design and facilitation. Creating an engaging yet non-intimidating learning experience appears to enhance the effectiveness of escape rooms, particularly for Generation Z**,** who value both stimulation and support [12]. Overall, this suggests that escape rooms can successfully maintain excitement and motivation while safeguarding student well-being.

Professional nursing values

Collaboration is a fundamental aspect of nursing, and nurturing this ability in student nurses is crucial to their professional growth. Escape room activities offer an innovative way to replicate authentic team-based environments where participants must depend on each other to reach collective objectives. Existing research

highlights that such interactive approaches enhance teamwork through open communication, mutual trust, and cooperative problem-solving [17]. These collaborative experiences correspond with the interpersonal nature of nursing practice, where effective teamwork directly contributes to improved patient care [18]. Moreover, the interactive, stimulating format of escape rooms aligns with the learning tendencies of Generation Z, who prefer participatory and group-centered educational settings [12]. By embedding teamwork in a structured yet adaptable learning framework, escape rooms serve as an effective method for preparing student nurses to meet the collaborative demands of clinical environments and to grow as professionals.

Developing decision-making competence represents another essential part of nursing education, shaping how students understand accountability, ethical reasoning, and their broader role in healthcare. Escape rooms present an innovative setting for advancing these skills, immersing learners in problem-based situations that emphasize core nursing principles such as patient advocacy and moral judgment. Prior literature supports the role of interactive learning techniques—including escape rooms—in reinforcing professional ethics by placing students in authentic, high-pressure contexts where they must demonstrate appropriate professional behavior [25]. Such activities prompt learners to reflect on their decisions, thereby helping them internalize the attitudes and conduct expected of practicing nurses [16]. Furthermore, the shared learning environment promotes peer collaboration, encouraging mutual respect and shared responsibility. This connection between theoretical understanding and hands-on application strengthens students' professional identity and equips them to manage the complexities of healthcare practice with greater assurance.

Experience of escape rooms

Participation in the escape room exercise was characterized by strong engagement, enjoyment, and immersion, which collectively contributed to its pedagogical effectiveness. Unlike conventional classroom methods, escape rooms provide an active and experiential learning approach, allowing students to apply theoretical knowledge within a collaborative, problem-solving context. Studies indicate that experiential learning improves motivation and knowledge retention by presenting realistic and memorable learning moments [39, 40]. Additionally, the adaptable structure of escape room activities enables learners to participate comfortably at their own pace, creating a supportive and inclusive learning atmosphere [41]. The novelty and interactivity of these sessions also appeal to Generation Z students, who favor educational experiences emphasizing participation, feedback, and immediate engagement [13]. Overall, the positive outcomes highlight escape rooms as accessible, stimulating, and effective tools for developing both cognitive and professional competencies in nursing education. However, it is important to consider individual differences in academic and social abilities. Students who struggle to complete escape room challenges may experience frustration or dissatisfaction with the learning process [42, 43].

Limitations

This study faced several limitations, including a restricted sample size, the design of the questionnaire, and aspects of participant recruitment. Although the small cohort may affect the generalizability of results, comparable studies investigating students' perceptions of escape rooms as learning tools have used sample sizes between 14 and 42 participants**,** still producing credible findings [41, 44]. Thus, the sample size in this research remains consistent with accepted norms for similar educational investigations. Efforts were made to address the potential weaknesses in questionnaire construction by ensuring that all questions were clear, targeted, and directly related to the study's aims, thereby minimizing ambiguity and improving data quality [45]. While using predominantly closed-ended questions limited the depth of qualitative analysis, it facilitated 100% completion and streamlined data processing. The potential for response bias—such as participants avoiding extreme answer categories—was acknowledged [26], but remains an inherent limitation of Likert-type research. Despite these constraints, the results provide meaningful insights into the educational potential of escape rooms and align closely with previous findings in this field, reinforcing the credibility of the study.

Conclusion

Most published research regarding escape rooms in nursing education focuses on their use in clinical simulations. However, implementing such experiences within academic environments can significantly enhance student engagement and promote the professional values vital for nursing practice.

This pilot study highlights the effectiveness of escape rooms as an innovative educational approach that strengthens key professional attributes—namely, teamwork, decision-making, and communication. By involving students in interactive, group-based, and practical learning settings, escape rooms help close the gap between theory and practice while catering to the expectations of modern learners, particularly those from Generation Z. Findings indicate that escape rooms not only encourage professional identity and collaboration but also provide a low-stress, enjoyable learning atmosphere, challenging traditional assumptions about the stressfulness of simulation-based activities.

As nursing education evolves alongside technological progress and generational change, adopting creative methods like escape rooms offers an engaging, inclusive, and contemporary strategy for preparing students for collaborative, fast-paced clinical settings. Although this study contributes valuable perspectives, further research is necessary to explore scalability and adaptability across various educational contexts. Future studies should investigate the long-term influence of escape rooms on clinical readiness and evaluate their effectiveness across generational and cultural differences. Moreover, longitudinal research tracking their impact on professional development throughout nursing training and into clinical practice would provide a deeper understanding. By refining and expanding such innovative strategies, nursing education can continue leading the way in equipping students for the ongoing challenges of modern healthcare.

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