

Review Article

Approaches to fostering active learning techniques for generation Z in nursing education: concept review article

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ABSTRACT

Nursing education is undergoing a significant transformation as generation Z enters the field, requiring educators to adapt their pedagogical approaches to effectively engage and prepare these digital natives for the complexities of modern healthcare. Adapting medical curriculum to the needs of the generation Z may bridge the generational divides. Generation Z is the most diverse generation identified. With traits like tech-savviness, flexibility in learning, social relevance, creativity, self-expressiveness, predominant hands-on learners valuing practical skills, driven with immediate feedback, engaging learners, participatory, curious, collaborative, self-directed, preferring autonomy yet a short attention span, they demand comfortable, conducive learning environments that fulfil their learning goals. These tips expressed aimed to sensitize the instructors to merely act as facilitators with the help of the mentioned active strategies, thereby enhancing the satisfaction of both teachers and learners.

Keywords: Fostering active learning, Nursing education, Generation Z, Learning techniques

INTRODUCTION

Nursing education is undergoing a significant transformation as generation Z enters the field, requiring educators to adapt their pedagogical approaches to effectively engage and prepare these digital natives for the complexities of modern healthcare.¹ Generation Z students possess unique learning preferences and characteristics, shaped by their upbringing in a technology-rich and

rapidly changing world.² These students have never known a world without the internet, and digital technology is an integral part of their daily lives, influencing how they learn, communicate, and interact with information.³ They are adept at finding information and communicating in the digital world.² Active learning strategies, which emphasize student engagement, collaboration, and critical thinking, offer a promising avenue for fostering deeper understanding and skill development in this new generation of nurses.⁴ By understanding the characteristics

and preferences of generation Z, nurse educators can implement innovative teaching methods that resonate with their learning styles, ultimately enhancing their educational experience and preparing them to excel in their future roles.

Generation Z is the trending generation that has captivated the interest of many researchers. Defining the traits of the generation Z plays a crucial role in tailoring the strategies for creating a conducive learning environment for them. Proficient use of technology, being pragmatic, openness in discussing mental health and preference towards a multimodal learning approach are few of the generation Z attributes revealed with the literature search.^{1,2} Faculty development with technology updates, barriers in in-person communication skills and demand on flexibility in the educational process will be the major challenges faced by the medical educators in handling generation Z students.³

Active learning is defined as “Instructional activities involving students in doing things and thinking about what they are doing”, by Bonwell and Eison.⁴ Equipping the medical educators with the knowledge on active learning strategies may help them to devise appropriate lessons to foster learner engagement, the analytical and creative thinking by the students.⁵ Active learning has been shown to improvise group dynamics, enhance learning and higher order thinking by the students.^{6,7} Adoption of a combined approach with multiple strategies have been recommended to address the short attention span of the generation Z students.⁸

We would like to share tips to match the traits of the generation Z with appropriate active learning strategies, implementing a favorable learning environment.

ADAPTIVE LEARNING (MAPPED TRAIT: CUSTOMIZED LEARNING, TECH-SAVVINESS)

Generation Z prefer customisable learning experiences, flexible learning environment that facilitate them to learn at their own pace. Eckleberry-Hunt recommended appropriate strategies to train and recruit generation Z individuals in nursing education.³

Generation Z students are particularly drawn to technology, effortlessly accessing information through personal devices, which makes simulations appealing and widespread.^{3,4} To effectively integrate technology into the curriculum, educational institutions should prioritize the development of digital literacy and technological proficiency, thereby creating opportunities for students to apply their knowledge in practical, real-world scenarios.⁸

Adaptive learning offers personalized learning experience with on-demand learning process and feedback to the smart learners.⁹ Osmosis, Smart Sparrow, Firecracker and Coursera are some of the adaptive learning platforms that have been known to offer comprehensive understanding of

the concepts, augmentation of learning, enhanced satisfaction, confidence and better performance in the summative examinations.¹⁰⁻¹³ These adaptive technological platforms driven by algorithms provide flexible, student-centric approach, facilitating spacing and sequencing of the learning material correlating with the individual frequency. Thus, adaptive learning platforms may be very well mapped with the customized learning habits and tech-savviness of the gen Z students.

BLENDED LEARNING WITH PEER FEEDBACK (MAPPED TRAIT: TECH-SAVVINESS AND COLLABORATIVE LEARNING)

Blended learning is combining the traditional class room teaching with the online learning experiences. Integrating technology into the traditional settings has been shown to foster collaborative learning, enrich active learning and catering to the needs of digital natives.¹⁴ Generation Z learners value flexibility and autonomy which is allowed by blended learning. Blended learning may benefit these tech savvy students who prefer interactive and engaging learning environments.¹⁵ Blended learning has been proved to increase learner satisfaction, stimulate enthusiasm and enhanced their clinical thinking capacity.¹⁶ The utility of blended learning helps the students to be in their own pace in the preparatory time and during online activities. In addition, this enhances classroom time to be effectively utilized for problem solving, collaboration, discussion and peer interaction as expected by the students. Blended learning and generation Z students always remain complementary to one another.

CASE STUDIES ON REAL WORLD PROBLEMS (MAPPING TRAIT: SOCIAL RELEVANCE)

Generation Z students actively seek content that is practical and actionable, striving to connect classroom learning with societal health issues, career opportunities or pressing issues like environmental sustainability and social justice. They prefer the learning goals to be in alignment with the societal challenges. Exposing the students to case scenarios depicting real world problems convince them to engage deep into the learning process, as being adult learners, they prefer relevance of learnt material to the social context. Problem based learning (PBL) involves presenting a clinical problem that will motivate students to collaborate and work in team to form conclusions and make decisions.¹⁷ The faculty merely acts as facilitators. Problem based learning may well suit the open-minded inclusiveness and the tech savvy trait of the digital natives strengthening their critical thinking skills.¹⁸

DIGITAL STORY TELLING (MAPPING TRAIT: CREATIVITY AND SELF-EXPRESSIVENESS)

Blending graphics, music, audio, video and text to create an engaging story evolving around a chosen concept refers to “digital story telling” (DST). It creates a fun-filled atmosphere increasing students’ interest and participation.

DST has been found to have a positive impact on learning.¹⁹ The familiarity of digital natives to digital tools and platforms enables them to easily adopt and excel in creating digital stories. The students with their creative skills may create their own stories. This will help them to retain information, facilitate them to reflect on the activities, improve their communication and analytical skills. It is reported that digital story telling enhanced memory retention in nursing students.²⁰ It is an effective teaching and learning tool mapping with the creative skills and self-expressiveness of generation Z students.

EXPERIENTIAL LEARNING (MAPPING TRAIT: HANDS-ON LEARNERS, VALUE PRACTICAL SKILLS)

Generation Z, often characterized as "true digital natives," exhibits distinct learning preferences that necessitate a re-evaluation of traditional teaching methodologies in nursing education.¹ Possessing innate familiarity with technology, they demonstrate proficiency in accessing information and engaging in digital communication, having grown up in an era defined by ubiquitous internet access.¹ This generation's immersion in digital technologies has profoundly influenced their learning characteristics, setting them apart from previous generations.²

Generation Z learners learn best through doing rather than passive listening. Simulations, Internships, field visits and projects may help them taste the process of experiential learning. Experiential learning offers real-world relevance and provides opportunities for meaningful feedback and growth. The generation Z learners have been identified to value hands-on practice and considered experiential learning to enhance their performance of clinical skills.²¹ Experiential learning may happen in classroom settings, skills lab, problem solving, community postings and during internship. Early clinical exposure, modules on attitude, ethics and communication skills (AETCOM), elective postings, clinical clerkship, family adoption programs and simulation trainings in competency based medical education allow students to reflect on their experiences and reconstruct their knowledge.²²

FEEDBACK-DRIVEN AUDIENCE RESPONSE SYSTEMS (MAPPING TRAIT: FEEDBACK-ORIENTED AND ENGAGEMENT-FOCUSED)

Audience response system enables the compilation and display of student responses to the audience. It not only helps to identify the level of students' understanding, instructors' expectations but also enhances the students' awareness of their own learning. Thus, it creates an environment that offers immediate feedback for both the learners and the instructors. The benefits of audience response systems have been identified as increased student engagement and attention, improves learner outcomes, provide student anonymity, increases peer interactivity and class participation, easy and enjoyable to use thereby

encourages active learning and improves student attendance.²³ Socrative, Quizizz, Pear Deck, Slido, Wooclap ClassPoint and Kahoot are some of the interactive feedback-driven audience response system used for active learning.^{24,25} Thus Feedback-driven ARS resonates with gen Z's tech-savviness, need for immediate feedback, and preference for interactive, data-driven, and engaging learning experiences.

GAMIFIED LEARNING ACTIVITIES (MAPPING TRAIT: TECH-SAVVINESS AND ENGAGING)

Gamification refers to incorporation of game-elements to an educational setting. The academic contents are converted into game-based themes. It is known to enhance motivation, behavioural changes, collaboration and learner engagement. The key elements of gamification have been identified to be integration with training goal, clear declaration of game rules, mechanism of rapid feedback, points for scoring, promoting teamwork, being competitive, increasing levels of difficulty, offering freedom to fail, peer rating and integration with software.²⁶ Negative impacts with poorly designed games, logistics issues, lack of skills in the trainers, time constraints are some of the challenges to be kept in mind while planning gamification of instructional activities.²⁷ Gamification aligns with generation Z's engagement-driven mindset and tech-savviness by transforming learning into an interactive, reward-based experience that fosters motivation and active participation.

HAWKNESS METHOD (MAPPING TRAIT: PARTICIPATORY NATURE AND COLLABORATIVE LEARNING)

Hawness method is a student centric method, where the students sit around an oval table, engage in open discussions. This discussion-based approach emphasizes collaboration, communication and critical thinking. Harkness method involves maximum student participation, ensures sharing of thoughts by the students, aids in the development of confidence, public speaking, respect for others' ideas. However, it is not free of challenges. Setting up a round table, time consumption, not suitable for engaging large groups, diversion due to different views are some of the challenges faced in Harkness method. Moraliashvili has identified Hawness method as an effective alternate to the traditional classroom settings, as students assume different roles in turns, improving their participation.²⁸ Thus, the Harkness method aligns with generation Z's collaborative nature and preference for active participation by fostering peer-led discussions that promote teamwork, critical thinking, and inclusive learning.

INTERACTIVE MICROLEARNING SESSIONS (MAPPING TRAIT: SHORT ATTENTION SPAN)

Delivery of the content in small, manageable bytes easy for the students to consume the information and digest.

This maps very well with the distinct trait of short attention span of the generation Z students. Zarshenas identified the effectiveness of microlearning in the form of short videos for the nursing students.²⁹ Flash cards, podcasts, infographics, mobile apps are some of the ways used for offering microlearning for the students. Information overload, lack of engagement are some of the reasons for short attention that can be overcome by microlearning. The advantages of microlearning include flexibility, enhanced retention, adaptability and cost effectiveness. The major challenges include reliability on internet connectivity, extensive lesson planning by the faculty and lack of clear pedagogical rules in the preparation of the educational content. Interactive micro-learning sessions cater to generation Z's short attention spans by delivering concise, focused content paired with engaging activities to sustain interest and enhance knowledge retention.

JIGSAW TECHNIQUE (MAPPING TRAIT: CURIOSITY AND COLLABORATIVE LEARNING)

The first generation of digital era, generation Z demand innovative instructional methods in their learning process. In the Jigsaw technique, the students are divided into "parent groups" where every student is allotted a topic for self-learning and discussion. Then each student in a group interacts with the student of another group forming "Expert groups", for discussion over the allotted topic. Later like a jigsaw puzzle, the expert group disintegrates and reform the parent groups, for their effective presentation of the topic in the parent group. Thus, it promotes cooperative learning, improves group dynamics, enhances interaction and participation, equal importance is given to all the students. Based on a study by Kumar Jigsaw technique has known to enhance the cognitive skills of the students and can be tailored to the needs of the content in addition to the needs of the learners.³⁰ The jigsaw method aligns with generation Z's collaborative and social nature by promoting teamwork, peer-to-peer learning and shared responsibility, creating an engaging learning environment.

KNOWLEDGE CO-CREATION (MAPPING TRAIT: EMPOWERMENT AND OWNERSHIP)

Involvement of students in the creation, implementation, evaluation, revision, designing with feedback for co-creation of curricular, instructional, evaluation content with other stakeholders refers to knowledge co-creation. Enhanced academic performance, improved skills for future professional growth, ensuring transparency, shift of focus to learning, increased autonomy, responsibility, understanding the ownership, being valued are some of the major outcomes identified by a review on co-creation.³¹ The major challenges addressed in knowledge co-creation are time constraints, disadvantages from sticky classes, gaps between planned and executed practice and sustenance of co-creation. Embrace of knowledge co-creation approach may empower the students to become curious, responsible and confident thinkers.

LEARNING STATIONS (MAPPING TRAIT: SELF-DIRECTED LEARNING AND AUTONOMY)

Structuring and organizing the classroom into small stations with different tasks, and the learners will rotate through different stations and complete the task followed by a debriefing session. It can be also done online, making the process more self-paced and self-directed. A meta-analysis on utility of learning stations has shown to have a positive influence on learning.³² The learning stations have been found to be more effective in science and technology. The learning stations developed in basic sciences have been proved to be effective in integrating the basic science knowledge with clinical aspects for the medical students.³³ The organization of the learning stations may provide motivational factors and obstacles in teaching. Thus, learning stations align with generation Z's need for active engagement and flexibility by offering hands-on, self-directed activities that promote exploration and autonomy.

DISCUSSION

Active learning techniques are crucial for engaging generation Z students in nursing education, fostering critical thinking, and promoting a deeper understanding of complex healthcare concepts.¹ It is essential for nursing professional development practitioners to guide, support, and develop nursing staff, keeping in mind the attributes of generation Z.² To effectively cater to this generation, educators must embrace innovative pedagogical approaches that resonate with their unique learning styles.³ Understanding the characteristics and preferences of generation Z is paramount in designing effective teaching strategies.⁴ Institution technological skills, while also providing opportunities for students to apply their knowledge in real-world scenarios.⁵ Problem-based learning can capture students' attention through relevant clinical problems, offering a meaningful learning medium applicable to their future roles in patient care.¹ Such strategies include incorporating technology, promoting collaboration, and providing personalized feedback, which can significantly enhance the learning experience for generation Z nursing students. Educational institutions must focus on fostering resilience among generation Z nursing students to help them navigate the challenges inherent in nursing education and practice.⁶ By understanding the specific challenges and opportunities presented by generation Z, nurse educators can tailor their teaching methods to optimize learning outcomes and prepare future nurses for success in the evolving healthcare landscape.⁶⁻⁸

CONCLUSION

Fostering active learning in nursing education for generation Z necessitates a paradigm shift towards student-centered, technology-enhanced, and collaborative pedagogical approaches. To create effective learning environments, institutions should prioritize the development of digital literacy and technological skills,

while also offering opportunities for students to apply their knowledge in real-world scenarios. Students entering medical education predominantly belong to generation Z. It is high time that the medical educators tailor their strategies to the traits of these students. Generational diversity does bring transformations in medical education. Hence, these tips on inculcating active learning strategies mapped with the traits of generation Z may pave way in creating a comfortable learning environment for the students and also may facilitate instructors to align themselves with the growing demands.

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