Gaming as a Stepping Stone to Understanding Complexity

The Essentials of Baccalaureate Education for Professional Nursing Practice (American Association of Colleges of Nursing, 2008) states that graduates should possess an understanding and respect for the increased complexity inherent in caring for vulnerable patients across the lifespan. Sample content for this area can come from the theory of complexity science. The purpose of this article is to describe the gaming activity we use to introduce the concept of complexity science and complex adaptive systems.

Baccalaureate students in a large midwestern university are introduced to complexity and complexity science in the first-semester Introduction to the Profession course. Lindberg and Lindberg (2008) state, “Complexity science examines systems comprised of multiple and diverse interacting agents and seeks to uncover the principles and dynamics that affect how such systems evolve and maintain order” (p. 32). Clancy’s (2014) article provides a foundation for understanding the concept of complexity science. Students are required to read the article prior to attending class. This helps set the stage for building an understanding of complexity science within complex adaptive systems (CAS) and provides a description of flow in the natural world in relation to nursing workflow. Students come prepared to discuss the concepts identified in the article. We use a gaming activity to demonstrate the interplay between flow within a system by providing students a hands-on opportunity to understand CAS with the use of tennis balls and hula hoops.

The goal of the activity is to keep the tennis balls and hula hoops moving without touching the floor for the entire duration of the activity. Students stand in a large circle in the classroom and must keep the hula hoop continually moving by each person in the circle stepping through the hula hoop before passing it on to the peer next to them. Concurrently, students must keep the tennis balls moving by throwing them back and forth between peers without letting them touch the ground. Faculty begins to call out various instructions, such as individuals wearing green must sit down and students with blonde hair turn around and face the wall while the tennis balls and hula hoops continue to move.

Following the activity, students return to their seats for the debriefing session to discuss how the game simulated a CAS and complexity science. Students discuss how the hula hoop mimics the short and slow flow, while the tennis balls resemble the long and fast flow described by Clancy (2014). The relationship between the clinical environment and working with various patients, providers, family members, and technologies that all contribute to complexity in the work environment is also discussed in relation to the gaming activity.

At the end of the class session, students complete a reflective journal describing their takeaways from the activity. One student wrote the following journal entry:

The activity today helped to visualize how being a nurse can make you have to change your plans or your schedule at any moment. You may have everything under control and then here comes a tennis ball! This could be a patient’s status deteriorating or a new patient added to your work load. Then, here comes the hula hoop just as another ball is being thrown at you. You have to take vitals and reposition a patient at the same time a new patient comes to your floor under your care. Nurses must always be alert and adaptive. Anything can happen at any time and being part of a complex adaptive system helps us to cope and take better care of our patients.

Another student responded with the following journal entry:

As a nurse within these CASs, one has to perform daily responsibilities, which I relate to the hula hoops. These are the processes that are routine, that can be set in motion and possibly attended to less frequently, and/or that can be handled by nursing asistive personnel. The tennis balls are the sudden emergencies, the critical patients, the distractions, and other things that require directed attention, for if one fails to do so, then something catastrophic could occur potentially.

As faculty walked into the classroom with hula hoops and tennis balls for the class session, one senior nursing student who had participated in the activity the previous year looked at course faculty carrying the hula hoops and said, “It’s complex adaptive systems day!” Apparently, the lesson stuck.

References

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