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Research Article

Using Constructivism and Student-Centered Learning Approaches in Nursing Education

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Abstract

Many pedagogies and androgogies have been proposed in nursing education in recent years to improve students' success both in the graduate and undergraduate programs. Both student-centered and active leaning have been suggested in nursing curricula utilizing constructivism as theoretical framework. Nonetheless, there is some need to illuminate some light into these concepts. When using these methods, the overarching goal is to enhance active learning and move the learning experience from the archaic passive learning mode to the contemporary active learning mode. To that end, students' "Buy-In" and engagement in the learning process are hallmarks to produce successful and fruitful learning experiences. This article offers an overview of both constructivism and student-centered learning. It discusses constructivism from a philosophical and andragogical perspective. It also shed some light into the basic characteristics and elements of both teaching modalities, and then finally it discusses potential strategies and implications for using these teaching modalities in nursing education.

Keywords: Active leaning; Constructivism; Nursing education; Student-centered learning

Introduction

Student-Centered Learning (SCL) or active learning have been explored as strategies to improving students learning outcomes and ensuring their success in nursing academia throughout the United States (U.S.). Although, there have been a lot of rhetoric and inconsistencies regarding the exact definition or the constituents of student-centered learning approach among academic nursing programs both in the graduate and undergraduate programs, the majority agree that this methodology is fundamentally student-driven and places students at the center of their learning experience by taking an active role in fulling their learning outcomes. The pivotal point to these approaches though is to elicit active engagement by students and immerse them from being "Etic" into becoming "Emic" in their learning experiences. Hence, the process of teaching is no longer unidirectional, unitary, and content-laden method where the instructor makes deposits of knowledge into empty accounts "Students' Brains". Instead, the student now is fully engaged and accountable for achieving expected learning outcomes [1]. Hypothetically, this paradigm shift in teaching methodology does promote learners' self-efficacy, enhance students' critical thinking, and promote freedom of ideas without any sort of ideological oppression. Nonetheless, it is rather vital to examine constructivism and student- centered learning from a nursing opus. Therefore, it is the goal of this article to provide some conceptual clarity of both constructivism and SCL.

Background

The shift in nursing education from teacher-driven and content-laden approaches to student-driven approaches has been challenged as a new but needed change in nursing academia. Many nurse educators are embracing pedagogies and androgogies that carry labels such as student-directed learning, process-oriented learning, experiential learning, and narrative pedagogies [1]. Student-centered learning is a movement and a philosophy and can be defined as "A shift in responsibility from lecturer to student with the latter assuming greater ownership of their learning" [2]. It

is further defined as "Ways of thinking and learning that emphasize student responsibility and activity in learning rather than what the teachers are doing. Essentially SCL has student's responsibility and activity at its heart, in contrast to strong emphasis on teacher control and coverage of academic content in much conventional, didactic teaching" [3]. Likewise, this pedagogical shift has created with it a revolution in epistemology, and henceforth the philosophical underpinnings or assumptions have been transformed as well. The traditional and ancient teacher-centered approach has epistemological tenets in the positivist school of thought; in contrast, the SCL approach has its epistemological tenets in the constructivist school of thought [4]. Consequently, and from an ontological stance, this created a shift also from the notion that only one reality exists in the universe toward the idea that multiple realities do exist.

Constructivism

In this epistemological approach, human knowledge is rejected and meanings are constructed instead. Meaning is neither described as objective nor subjective; "There is no meaning or truth; truth comes into existence in and out of our engagement with the realities in our world" [5]. Human reality and knowledge depend largely on our interaction with the world and is constructed as result of this interaction and transmitted within social contexts [5]. Constructivist learning/pedagogy has been defined as "The creation of classroom environments, activities, and methods that are grounded in a constructivist theory of learning, with goals that focus on individual students developing deep understandings in the subject matter of interest and habits of mind that aid in future learning" [6]. Constructivism is a learning theory founded in philosophy and psychology and has its historical roots in the work of Dewey, Bruner, Vygotsky, and Piaget. I t assumes that human knowledge is socially constructed and created by learners' preexisting life experiences [7].

The Constructivist Learning Theory has three different forms. The first from is called Radical Constructivism, which is considered the utmost extreme form of constructivism since it assumes that reality is external to the individual, however, this reality is enigmatic [8]. Social Constructivism is another moderate form of constructivism; it asserts social interaction as a source of knowledge rather than individual intellect. Knowledge and reality are consequences of individuals' social interactions [8]. Cognitive Constructivism is the final form which was developed by Jean Piaget [9]. It assumes that knowledge is rather objective and comes external to individual's reality [8]. The Constructivist Learning Theory emphasizes that students learn by connecting new ideas and experiences to existing knowledge or experiences to form a new more enhanced teaching [1]. Furthermore, a fundamental tenet of the constructivist learning theory is that learning occurs via three operating systems (assimilation, accommodation, and equilibration).

In the assimilation phase, the student tries to fit new knowledge into already established framework; whereas in the accommodation phase, the student tries to modify and emulate the already existing framework with the new information. Finally, is the equilibration phase, which resembles the biological act that requires the individual to acclimate and adjust to the environment; any imbalance in previous knowledge will direct the student to reconstruct understanding to preserve equilibrium. Equilibration is finally achieved by means of assimilation and/or accommodation [1,10]. Additionally, constructivist learning/pedagogy looks at learning as a mechanical process of intervention as opposed to an organic learning process. Meaningful learning occurs through reflection and linking the new acquired knowledge to a preexisting experience [9].

Principles and Characteristics of Constructivism

Fox [11] addressed some of the assumptions and basic characteristics of the constructivist learning theory:

Learning is an active process.

- Learning is an adaptive activity.
- Learning is situated in the context in which it occurs.
- Knowledge is not innate, passively absorbed, or invented but constructed by the learner.
- All knowledge is personal and idiosyncratic.
- All knowledge is socially constructed.
- Learning is essentially a process of making sense of the world.
- Experience and prior understanding play a role in learning.
- Social interaction plays a role in learning.
- Effective learning requires meaningful, open-ended, challenging problems for the learner to solve (p. 24).

These elements and characteristics reemphasize the inherit nature of constructivism. Learning has to be active to ensure students' engagement and "Buy-In" in the learning experience. This will consequently foster accountability on the student side to be responsible for his/her learning experience. Furthermore, learning has to be adaptive. Different students learn by different learning styles. It is the educator role then as a collaborator to ensure first assessing students learning styles and to accommodate the delivery methods to accommodate these learning styles. Moreover, learning is personal and idiosyncratic; students have different and diverse life experiences that can be exchanged with the teacher and other students to produce more effective and fruitful learning. Finally, social interaction is a fundamental principle to generate knowledge among students. Knowledge is socially constructed

and interactions among students should be encouraged and should be considered as one of the teaching techniques for educators. Richardson [6] also discussed some common characteristics of constructivist learning,

- Attention to the individual and respect for students' background and developing understandings of and beliefs about elements of the domain (this could also be described as student-centered).
- Facilitation of group dialogue that explores an element of the domain with the purpose of leading to the creation and shared understanding of a topic.
- Planned and often unplanned introduction of formal domain knowledge into the conversation through direct instruction, reference to text, exploration of a Web site, or some other means.
- Provision of opportunities for students to determine, challenge, change or add to existing beliefs and understandings through engagement in tasks that are structured for this purpose.
- Development of students' met awareness of their own understandings and learning processes (p. 1626).

The before mentioned elements of constructivism can produce students' engagement in the learning experience. The educator as a facilitator for learning has to respect students' diversity, backgrounds, and how these students develop their understandings of reality. It is vital not to undermine students' belief systems in the learning experience. Learning can be an explicit or implicit contract among students and their educator that is based on trust and mutual respect for each other and the genuine interest in learning from each other's life experiences. Additionally, it is critical for educators to elicit dialogue and group discussions among students that would foster better understanding. Educators are further encouraged to stimulate critical thinking by using reflective thinking and critiquing with the help of references and resources that are made available to students.

Furthermore, Fosnot [12] suggested some principles of the constructivist pedagogy that can be applied to educational settings. In his view,

- **Learning is not the result of development; learning is development:** The teacher role is to facilitate critical thinking of students by continually probing and using Socratic questioning to improve comprehension.
- Disequilibrium facilitates learning. This disequilibrium should be embraced by both the teacher and the students as an opportunity to expand knowledge either by assimilation or accommodation.
- **Reflective abstraction is the driving force of learning:** Prompting critical thinking is viable and very integral for nursing students both in the classroom and the clinical setting. By using techniques such as journaling and reflection, the students are guided to utilize higher level of cognition, such as analysis, synthesis, and evaluation.
- **Dialogue within a community engenders further thinking:** The classroom should be looked at as "mini community" where the students are accountable and responsible for constructing safe and effective learning environment. Group discussion and dialogue should be encouraged to enhance socially constructed knowledge among students.
- **Learning proceeds toward developing structures:** In constructing new knowledge, students move in a more progressive fashion. This construction causes disequilibrium at first, but eventually it will help them in their comprehension.

Student-Centered Learning

One can argue that student-centered learning and using constructivism in teaching are both synonymous, conceptually aligned, and drive both the educator and the learner in the same direction of collaborative learning. In nursing curricula, there is a paradigmatic shift to adopt the student-centered learning approach using constructivism. When discussing both, we will find many commonalities between both modalities, and hence, it is the goal of this article to discuss both strategies to illuminate some clarity in nursing education. Student-centered learning as discussed previously calls upon students to be active participants in their learning experience; it is a method where the student is placed at the center of the learning experience with the accountability toward fulfilling learning outcomes.

Lea, et al. [4] postulated that SCL has elements that are considered very favorable to fostering rich student-centered learning experiences, these elements include:

- Shifting learning from a passive to an active approach.
- Emphasizing deep learning and understanding.
- Promoting students' accountability and responsibilities toward learning.
- Enhancing students' autonomy.
- Establishing mutual respect between students and teacher.
- Adoption of reflective practices while teaching to enhance critical thinking.
- Consulting and inclusion of students' views in the learning and teaching processes.

While implementing SCL, it is vital to incorporate students' interests and learning styles into the learning experience. Placing

the student at the center of the educational experience can produce accountability and engagement for successfully achieving expected learning outcomes. Essentially, this notion doesn't really delete or reduce the teachers' role in the educational experience; instead, it promotes collaboration and facilitation between the educator and the learner. The teacher's role becomes more of a facilitator ensuring students are committed to achieving their own learning outcomes. Moreover, it is crucial that students also have an active role in their assessment and evaluation phase of the educational experience. Subsequently, this will also endorse a sense of stewardship and tenureship among students. McCabe and O'Connor [2] asserted that a student-centered learning approach encompasses four vital principles: active responsibility for learning, proactive management of learning experience, independent knowledge construction, and teachers as facilitators. Historically speaking, the notion of student-centered learning has been proposed previously. As a matter of fact, Hayward was credited to be the first person who coined the term student-centered learning back in 1905 [13].

Furthermore, previous studies have shown promising positive relationships between SCL and promoting critical thinking and problem-solving skills, improving learning outcome, higher testing grades, greater participation, and improved motivation [13,14]. In the nursing profession, the idea of incorporating student-centered learning for the pre-licensure baccalaureate nursing programs is a tactic that is congruent with both the American Association of Colleges of Nursing (AACN) "Essentials of Baccalaureate Education for Professional Nursing Practice" and The National League for Nursing (NLN) 2012 "Nurse Educator Core Competencies". For example, the nurse educator core competencies have been established with an intentional focus on incorporating student-centered learning and include the following elements:

- Facilitate learning where the nurse educators would be responsible for creating an educational environment in the classroom, laboratory, and clinical settings that would promote student learning and the achievement of desired cognitive, affective, and psychomotor outcomes.
- Facilitate learner development and socialization by recognizing students' responsibility to develop the values and behaviors expected of those who fulfill that role.
- Use assessment and evaluation strategies to asses and evaluate student learning in classroom, laboratory and clinical settings, as well as in all domains of learning.
- Participate in curriculum design and evaluation of program outcomes that would reflect contemporary health care trends and prepare graduates to function effectively in the health care environment.
- Function as a change agent and a leader by creating favored future for nursing education and nursing practice.
- Pursue continuous quality Improvements by fostering an ongoing commitment to develop and maintain competence in the role is essential.
- Engage in scholarship by acknowledging that scholarship is an essential component of the faculty role, and that teaching itself is a scholarly activity.
- Function within the educational environment by recognizing how political, institutional, social, and economic forces impact their role.

The movement of patient-centered care in nursing can be parallel to the movement of student-centered learning. There is a great deal of common themes between these two movements [1]. For example, one of the fundamental principles of the Quality and Safety Education for Nurses (QSEN) is rendering patient-centered care. This notion places patients at the center of care and allows patients control of their care [13]. Student-centered learning also places students at the center of their learning experiences and empower them by giving them control of their educational milieu. In a sense, both philosophies breach to understand the lived experiences of both patients and students. Below are some suggestions proposed by Disch [13] to implement the QSEN competencies in nursing programs:

- Involve students in creating their learning plans.
- Involve students in deciding their clinical rotations.
- Have students' representation in the school governing bodies and committees, such curriculum and admission committees.
- Develop evaluation systems that use students' inputs and recommendations.
- Develop a curricula literacy system for students.

Student-centered learning is not just a teaching modality "Per Se"; it is a tactic and a process that calls upon nursing programs to incorporate and involve students in the decision-making process. In a sense, it resembles shared-governance that is being implemented by different clinical settings across the U.S as an approach toward magnetism. The students now are involved and considered partners and active participants in the decision-making process. Moreover, the students should be responsible for creating some of the expected learning outcomes and behaviors to meet the program objectives. The students also are responsible and active participants in curriculum design and the evaluation process. This will promote accountability and engagement among students. Furthermore, the students are considered change agents and leaders by becoming involved in improving nursing education in general. Finally, students are inspired and encouraged to become scholars and to have influence by understanding and appreciating

the social, political, institutional, and economical impact on the nursing profession in particular.

Implications & Strategies in Nursing Education

Both constructivism and student-centered or active learning advocate for students' engagement and involvement in the learning process. Additionally, both approaches advocate shifting the focus of teaching form the content-laden, teacher-centered teaching tactic to the collaborative, student-centered methodology. In doing so, below are some suggested strategies and implications that can be used by nurse educators both in the classroom and in the clinical settings:

- **Promote an organizational climate and support systems that foster student-centered learning:** This way of thinking is very important in nursing academia; both the nurse educator and the students should have the organization leadership "buy-in" and support to facilitate a supportive yet collaborative and interactive learning environment. This support though has to be fiscally and psychosocially sound.
- **Consider the student a change agent responsible and accountable for the achievement of expected learning outcomes:** Empowering students by having them become responsible for and be active participants in their change will foster better engagement and commitment to their learning trajectory.
- **Promote students' autonomy in the decision-making process:** Allow and encourage students' initiative and ideas about their learning experiences. Have the student participate in drawing their educational plan for the course with course objective and learning outcomes. Moreover, encourage students' participation in the assessment and evaluation process of their learning experience.
- **Consider the teacher as a partner and a facilitator for their success:** The teacher is the facilitator who helps the students in their learning path. The teacher helps the students make a conscious effort to challenge themselves, make the connection, provide the resources, and empower them to become active participants in their learning experiences.
- **Provide students with innovative and interactive teaching techniques that promote critical thinking and problem-solving skills:** By using reflective thinking, concept mapping, Socratic questioning, and case studying, the students will be able to analyze, synthesize, and evaluate the new learned material.
- **Encourage emancipatory knowledge seeking behaviors:** Emancipatory knowing is defined as "Pattern of knowing that makes social and structural change possible; the ability to recognize barriers that create unfair and unjust social conditions and to analyze complex elements of the social and political context to change a situation that improves people's lives; praxis, which is value-motivated and constant reflection and action to transform the world, is fundamental process of emancipatory learning" [15]. This call upon the student to challenge the "status quo" and alleviate their way of thinking by looking at pertinent health care issues from a global and holistic perspective.
- **Incorporate the Quality and Safety Education for Nurses (QSEN) competencies into the course framework while targeting the three learning domains:** Both student-centered learning and patient-centered care are conceptually aligned and both call for the student or the patient to become actively involved and intentionally engaged in their care or their learning experiences [1,13].
- **Encourage students to analyze, synthesize, and evaluate the new learned material, thus prompting critical thinking:** Having the student become part of the assessment and the evaluation process will increase students' commitment to achieving their learning goals. This commitment can be enhanced by reflective thinking practices.
- **Promote collaborative learning techniques:** Collaborative learning is a partnership between the teacher and the student. They both work together and collaboratively toward achieving a common goal, which is students' success. However, this partnership is based on mutual respect and trust for one another. Both learn from each other's life experiences. Collaborative learning involves the students in their learning experience by taking an active role and becoming engaged in activities such as researching course material, formalizing course objectives, and formulating student-generated test questions based on learning objectives. The teacher guides the students in making sense and new interpretation of the new learned material.
- **Build students' engagement and commitment toward learning:** Active learning has been proved to improve students' engagement in the learning process. It calls for using instructional activities that require higher-order of cognition (analysis, synthesis, and evaluation) while targeting the three learning domains.

Conclusion

Both constructivism and student-centered learning are very beneficial and fruitful in nursing education. The traditional and passive approach of learning is no longer effective in today's modern education. Both of constructivism and student-centered learning modalities call for maneuvering the student to the driver seat and at the center and heart of the learning experience with the teacher functioning as a mentor and a facilitator. These modalities have been tested and have been proven in different disciplines. In

nursing though, there seems to be a need to be intentional about adopting active learning methodologies whether in the classroom or in the clinical setting. The question remains how intentional are we in deploying and fully instigating such approaches in our teaching pedagogies? We need as nurse educators to be honest with ourselves first and take the oath to lath the passive traditional approach and to embrace the more fertile active and student-centered approach. Constructivism and SCL can assist us in reaching these goals; both can be implemented to produce lifelong learners.

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