Moving toward heutagogical learning: Illuminating undergraduate nursing students' experiences in a flipped classroom☆

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ABSTRACT

Background: Nurse educators rely on the tenets of educational theory and evidence-based education to promote the most effective curriculum and facilitate the best outcomes. The flipped classroom model, in which students assume personal responsibility for knowledge acquisition in a highly engaging and interactive environment, supports self-directed learning and the unique needs of clinical education.
Objective: To understand how students perceived their experiences in the flipped classroom and how students' learning dispositions were affected by the flipped classroom experience.
Design: A phenomenological approach was used to gain deeper understanding about students' perspectives, perceptions and subjective experiences of the flipped classroom model. The focus of the study was on characteristics of student learning.
Participants: Fourteen Bachelors of Science of Nursing (BSN) students at a regional university in the southeastern United States.
Methods: Using data transcribed from face-to-face, semi-structured interviews, experiential themes were extracted from the qualitative data (student-reported experiences, attributes, thoughts, values, and beliefs regarding teaching and learning in the context of their experience of the flipped classroom) using Graneheim's and Lundman's (2004) guidelines; and were coded and analyzed within theoretical categories based on pedagogical, andragogical or heutagogical learning dispositions.
Results: Experiential themes that emerged from students' descriptions of their experiences in the flipped classroom included discernment, challenge, relevance, responsibility, and expertise.
Conclusions: The flipped classroom model offers promising possibilities for facilitating students' movement from learning that is characteristic of pedagogy and andragogy toward heutagogical learning.

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1. Introduction

The Institute of Medicine's (IOM) *The Future of Nursing* report (2011) highlighted the need for changes in nurse education which could produce professional nurses ready to practice "collaboratively and effectively" in a complex, evolving environment. One specific problem the IOM report cited is nurse education curricula and strategies that fail to impart relevant competencies and that add layers of new content (Ironside, 2004; IOM, 2011) rather than promoting the development of skills that will enable the learner to be flexible and nimble in an ever-changing health care environment (IOM, 2011). The IOM calls for new approaches for presenting fundamental concepts that can be applied in many situations, and that develop the skills necessary for students to become life-long learners.

Knowles (1970) introduced and developed the concepts of andragogy and self-directed learning based on learning differences between children and adults, as a response to pedagogical models that are more teacher-centered than student-centered and which may foster student dependence. More recently, Hase and Kenyon (2000) developed the concept of heutagogy to describe the study of self-determined learning. They characterized heutagogical approaches as emphasizing "the humanness in human resources; the worth of self; capability; a systems approach that recognises the system-environment interface; and learning as opposed to teaching" (higher education, Para. 4). We sought a model of teaching and learning that was grounded in principles of heutagogy.

Evidence in educational research suggests that the flipped classroom model is an effective model for college students (Lage et al., 2000; Frederickson et al., 2005; Day and Foley, 2006). Although literature

related to use of the flipped classroom model in nurse education is limited, especially in regards to student satisfaction with the model, evidence suggests that the flipped classroom can be useful for clinical education.

Clinical practice in a dynamic healthcare environment requires more than knowledge. Clinicians must also demonstrate essential critical thinking skills such as comprehension, reasoning, and exploring alternative frames of reference (Fero et al., 2010). Clinical education should be problem-based and self-directed (Barrows, 1983) and should facilitate critical thinking among learners (Yu et al., 2013). Though the flipped classroom model, which requires students to take primary responsibility for acquiring knowledge, supports the unique needs of clinical education; it has not been widely utilized in clinical education. Burns (2012) identified the flipped classroom as a model that had potential to increase critical thinking skills among medical students. It has also been recommended for general medical education and for anesthesia (Mehta et al., 2013; Prober and Khan, 2013; Kurup and Hersey, 2013).

Evidence to support the effectiveness of the flipped classroom for clinical education has been demonstrated among pharmacy and nursing students. Among pharmacy students, the flipped classroom improved exam scores, academic grades, the ability to work in teams, and student satisfaction (Ferreri and O'Connor, 2013; Pierce and Fox, 2012). Among baccalaureate nursing students, the flipped classroom improved examination scores and course pass rates, but not student satisfaction (Missildine et al., 2013). There has been little discussion in the literature describing the effectiveness of specific practices in the flipped classroom in nurse education, perhaps because implementation varies so widely and because no standard methodology for implementing the model exists (Hamdan et al., 2013; Moore et al., 2014; Schlairet et al., 2014). Furthermore, the flipped classroom could be an effective medium through which students might move toward heutagogical or self-directed learning, one of the primary skills and attitudes we are expected to impart to nursing students (Hase and Kenyon, 2000, section 1, para. 6).

Therefore, we developed a qualitative study following the implementation of a flipped classroom model in *Fundamental Concepts of Nursing Care*, a course in the undergraduate nursing curriculum at a regional southern university, in order to gain a deeper understanding of the student experience. The flipped classroom concept was operationalized within the didactic element of a semester-long course, which consisted of a 4-hour session each week. While our original purpose was to evaluate the course for institutional curriculum evaluation, we realized that both the novelty of flipping a classroom in an undergraduate curriculum and students' experiences and insights about the model could be very valuable to other nursing educators seeking new and innovative models. The dearth of evidence related to students' experiences of the model was instrumental in our choice of a qualitative design.

The design was chosen specifically to represent the third tenet of evidence-based practice, client preference and values. The foundation of evidence-based practice is supported by the triad of 1) the best research evidence; 2) clinical expertise; and 3) patient preferences and values (Lohr et al., 1998; Sackett et al., 2000; Institute of Medicine, 2001). The idea of professional decision-making and practice being based on evidence is as timely and salient in education as it is in the health care practice disciplines. However a review of definitions of evidence-based education, teaching, and instruction, reveal an absence of what is considered in healthcare to be a significant supporting element: preferences and values of the individuals or populations being served (Whitehurst, 2002; United States Department of Education, 2003; Comings et al., 2006). This element is widely understood to be applicable to patients in healthcare settings; and it may be the key element missing in the practice of nurse education, which tends to reflect an outdated, rigid and "highly structured curricula" that are "laden with content" (IOM, 2011). Heutagogical models, in which the learner drives

the learning, instead address "issues about human adaptation as we enter the new millennium" (Hase and Kenyon, 2000). In nurse education settings, how do we begin to incorporate new methods that have been demonstrated to be effective, but may be unfamiliar and potentially unacceptable to a complex group of students who do not fit neatly into any single generational category (Hoover, 2009)?

2. Method

2.1. Design

A phenomenological approach was used to gain deeper understanding about students' perspectives, perceptions and subjective experiences of the flipped classroom model. The focus of the study was on characteristics of student learning. We designed a study that solicited deep, nuanced data about students' experiences of the flipped classroom. The study protocol was reviewed and approved by the university's Institutional Review Board (IRB).

Validity was established using a three lensed approach during data collection and analysis, described by Creswell and Miller (2000). The first lens was that deep reflexivity established by dwelling in the data and "sense-making" (p. 125) throughout data collection and analysis; the second was through informal member-checking with participants (all of whom were provided with an opportunity to come for a member-checking appointment; five of whom elected to participate in member-checking); and the third was through peer debriefing with colleagues who were experts in the scholarship of teaching and learning and knowledgeable about the flipped model, but were not investigators in the study.

3. Context

3.1. The Flipped Classroom

The flipped classroom model was selected for two reasons: 1) because some evidence in educational research suggested that it could be an effective model for college students (Lage et al., 2000; Frederickson et al., 2005; Day and Foley, 2006), though we identified a gap in the literature related to use of the flipped classroom model in nurse education; and 2) because one of the primary skills and attitudes we are charged with imparting to nursing students is that of life-long learning, or heutagogy:

Heutagogy is the study of self-determined learning … It is also an attempt to challenge some ideas about teaching and learning that still prevail in teacher centered learning and the need for, as Bill Ford (1997) eloquently puts it 'knowledge sharing' rather than 'knowledge hoarding'. In this respect heutagogy looks to the future in which knowing how to learn will be a fundamental skill given the pace of innovation and the changing structure of communities and workplaces. (Hase and Kenyon, 2000, section 1, para. 6)

We felt as though the flipped classroom model could be an effective medium through which students might be moved toward heutagogical learning. We were seeking to address a gap in the literature that existed in terms of its use in nurse education. The flipped classroom model relies on information transfer in advance of (and outside) the classroom setting, and student-directed learning. Our operationalization of this model included student access to narrated PowerPoints via the university's online learning management system; self-selected problem-focused learning groups; case studies with faculty guidance and debriefing; ongoing competency demonstration through discussion (Canning and Callan, 2010) and learning-mapping (Hase, 2009).

Implementation of the model included creation of a highly intentional, self-directed and autonomous learning environment beginning

with narrated lectures and pre-readings which students consumed prior to class at a time and place of their choosing. These activities were designed to prepare students to apply concepts in the classroom. Students were encouraged to seek other resources and use their peers to clarify concepts they did not understand in the pre-learning activities.

The classroom was modified to accommodate small group seating (4 members) around tables; and portable devices and Wi-Fi accessibility enabled access to digital learning materials in the classroom. In this group learning space, students applied knowledge through peer instruction, small group work, short class discussion, problem solving scenarios, case studies, simulation, readiness quizzes and small group presentation. Faculty circulated among student groups to listen to discussion in order to deconstruct student thinking and assess weaknesses and foster strengths. A complete and detailed description of the intervention has been published (Schlairet et al., 2014).

3.2. Sample and Setting

The sample was comprised of 14 students who had been enrolled in the first fifteen-week semester of a traditional Bachelors of Science in Nursing (BSN) program at a regional university in south Georgia. The participants were members of two cohorts each capped at 40 students, and all were enrolled in three other courses at the same time they took *Fundamental Concepts of Nursing*. The concurrent courses were: *Pharmacology in Nursing, Professional Nursing Development*, and *Health Assessment across the Lifespan*. The flipped classroom was implemented only in *Fundamental Concepts of Nursing*. All students had the same course faculty for the course, and had the same balance of didactic, lab, and clinical experience. The textbooks and online materials were the same for all students.

Students were not provided with specific information about the interpretive frameworks of pedagogy, andragogy, or heutagogy; except in the context of member checking following data collection. However, during orientation to the course, students were provided with a verbal and written description of active learning that would take place in the flipped classroom. The purpose of the explanation was to help students understand how the flipped model supported different learning types and promoted self-directed learning; and to describe activities they would encounter, when and where they would complete activities, and what learning outcomes they could expect. Prior to this course, students had not been exposed to a flipped classroom; and the concurrent and subsequent courses in the nursing program were conducted in a traditional pedagogical lecture model.

3.3. Data Collection

Face-to-face, semi-structured interviews were conducted with students from the fall 2012 and spring 2013 flipped classroom cohorts to elicit information about their experiences in the flipped classroom, in the year following the students' experiences in the flipped classroom.

Data saturation (Glaser and Strauss, 1967; Lincoln and Guba, 1985) was reached at 14 participants. The IRB recommended against using a written consent form that required the participant's signature since the consent form is the only document that identifies the participant. Therefore, a consent script was used in the face-to-face interviews. The face-to-face interviews were conducted in a private location of the participant's choosing by a faculty researcher who was not involved in the delivery of the flipped class curriculum. The data were digitally recorded and transcribed verbatim. Students' names were changed in the recording and reporting of data to maintain confidentiality. Participants were solicited via confidential email to all students who had been enrolled in one of the flipped classroom cohorts. Participants were provided with a $5 gift card to a coffee shop for their participation in the interview sessions.

We included several demographic items on the interview guide to determine, by descriptive statistical analysis, whether there were any trends or associations of interest that might warrant quantitative investigation in a larger study. These items included *participant age* at time of interview, *general feelings* about the flipped classroom model, and the *college degree status* of the students' parents and/or guardians. We also included *self-identified learning type* (kinesthetic, auditory, or visual) as a demographic item, thinking it might provide direction for future investigation into the flipped classroom model. As part of orientation to nursing school, students had been introduced to the concepts of visual, auditory, and kinesthetic learning types (Fleming and Mills, 1992). Students participated in informal assessments to help them identify how they learned best, and were provided with strategies to support their personal learning type.

3.4. Theoretical Framework

Because the potential outcomes of the flipped classroom initiative include learner self-directedness, autonomy, and development of characteristics necessary for lifelong learning, we utilized the theoretical tenets of pedagogy, andragogy, and heutagogy to undergird the qualitative analysis (Barrows, 1983; Blaschke, 2012; Bhoyrub et al., 2010; Canning, 2010; Canning and Callan, 2010; Eberle and Childress, 2007; Hartree, 1984; Hase and Kenyon, 2000; Hase, 2009; Holmes and Abington-Cooper, 2000; Knowles, 1973, 1975; Knowles et al., 1984). Experiential themes were extracted from the qualitative data (student-reported experiences, attributes, thoughts, values, and beliefs regarding teaching and learning in the context of their experience of the flipped classroom) using Graneheim and Lundman's (2004) guidelines and were coded and analyzed within theoretical categories based on pedagogical, andragogical or heutagogical learning dispositions (see Table 1), in order to answer the following questions about students' experiences in the flipped classroom:

- How did students perceive their experiences in the flipped classroom environment?
- How were students' learning dispositions affected by the flipped classroom experience?

4. Results

The results that follow are a description of the results of our descriptive analysis of demographic items and analysis of associations of interest among demographic characteristics of the students who participated in the qualitative phase of the study and our qualitative analysis of students' experiences of the flipped classroom. The qualitative data report of results includes written interpretation that may appear to be discussion, but is actually analysis; the written interpretation is actually an analysis of results.

4.1. Demographic Description and Associations

4.1.1. Feelings About the Flipped Classroom
A *Negative* feeling was reported by 50% ($n = 7$), 14.3% ($n = 2$) reported a *Neutral* feeling, and 35.7% ($n = 5$) reported a *Positive* feeling.

4.1.2. Learning Type
Types not mutually exclusive, thus total >100%. *Kinesthetic* 28.6% ($n = 4$); *Auditory* 35.7% ($n = 5$); *Visual* 78.6% ($n = 11$). Of these students 57.1% ($n = 8$) reported a single learning type; 35.7% ($n = 5$) reported two learning types; and 7.1% ($n = 1$) reported three learning types.

4.1.3. Age
Mean 26.4 ($\pm$ SD 7.93); 21 to 48-years-old, slight positive skew (1.894). Using the definition of a *non-traditional age student* as those

over age 24 (United States Department of Education, n.d. this sample was evenly divided between traditional age students (21–23 years, $n = 7$) and non-traditional age students (24–48 years, $n = 7$).

4.1.4. Parent/Guardian College Degree Status

A slight majority (57%, $n = 8$) reported *No Degree*, with the remaining 42.9% ($n = 6$) reporting *Prior Degree* for parent/guardian.

Cramer's *V*, a chi-square based measure of association for nominal level data, was used for the analyzing the association between student opinion of the flipped classroom and the variables of learning type, age, and parent/guardian degree status (see Fig. 1).

Did individual learning type influence students' feelings about the flipped classroom model? Kinesthetic learners reported positive feelings about the flipped classroom model (Cramer's V = 0.849, p = 0.006) and visual learners (Cramer's V = 0.701, p = 0.032) reported negative feelings. The auditory learning type was independent of feelings about flipped class model (Cramer's V = 0.306, p = 0.520).

Did age influence students' feelings about the flipped classroom model? After collapsing age into two groups for analysis (traditional and non-traditional), no relationship was identified between students' age and their feelings about the flipped classroom model.

Did parent/guardian college degree status influence students' feelings about the flipped classroom model? No relationship was observed between student's report of parent/guardian college degree status and their feelings about the flipped classroom model.

4.1.5. Students' Experiences in the Flipped Classroom

Experiential themes that emerged from students' descriptions of their experiences in the flipped classroom included discernment, challenge, relevance, responsibility, and expertise. If at least five students (35.7%) reported one such common experience, it was considered a theme. Even students who did not feel generally positive about the flipped classroom model demonstrated movement from characteristics of pedagogical learning dispositions to andragogical and sometimes heutagogical learning dispositions.

4.1.6. Discernment

Almost every student mentioned the difficulty of learning the new language of nursing in conjunction with their inability to discern what information was important to know in the unique format of the flipped classroom, where they were responsible for self-preparation outside of class, and expected to come to class ready to apply the information. Students described becoming better able to discern during their time in the flipped classroom: at first being reactive and subject-centered, but moving toward characteristics of andragogical and heutagogical learning dispositions as they became self-reflective and more mature to the pre-professional role.
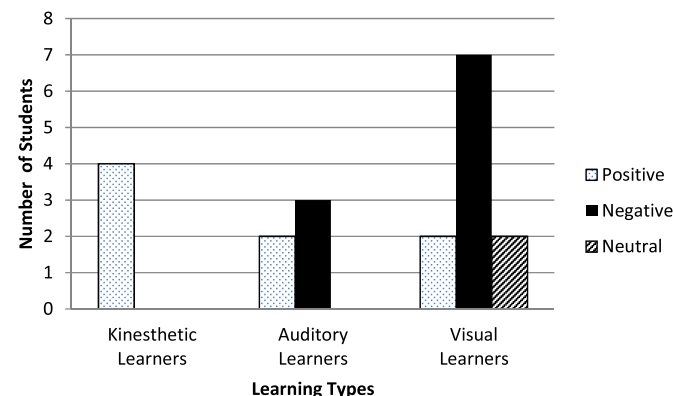

Fig. 1. Feelings about flipped classroom by learning type.

Nicole's description of herself from reactive and subject-centered demonstrated a move toward characteristics of andragogical and heutagogical learning dispositions, in that she became self-reflective and more mature to her role as a pre-professional student: "So many things click now… but why couldn't I figure that out then? It's just seeing the bigger picture…. I had tunnel vision then." Later she stated: "I did not like the flipped classroom, but I think there's things in nursing school that you end up learning to love because you see later on how it benefits you."

4.1.7. Challenge

Students referred to feeling uniquely challenged in the flipped classroom in ways they were not in traditional classrooms. They used a variety of descriptors, including the terms *hard*, *burden*, *overwhelming*, *weight*, *pushed*, *pressure*, *forced to be on your toes*, *a brick wall*, and *struggling*. These descriptors were sometimes framed positively and sometimes negatively, and this framing often coincided with the student's learning disposition in the context of the comment. Some exemplar statements described the challenge of literal movement from being passively "pushed" (other-directed, or dependent) to actively "moving" and "coming" (self-directed, or self-motivated).

Ivan's statement shows clear evidence of how a flipped classroom challenged students in a positive way: "In the beginning I felt pushed…: Yeah, I think it was a little rough. Maybe that discourages people a little bit. But it's nursing… it's going to be that way. As we moved through the semester it got easier because the concepts, I think, were coming" (Ivan). This comment demonstrates literal movement from being passively "pushed" (dependent) to actively "moving" and "coming" (self-motivated).

4.1.8. Relevance

Students discussed whether or not they experienced activities in the flipped classroom as being relevant to future professional practice and even future life outside of practice. Students' statements demonstrated movement from reactivity and immaturity to social role, to a confidence in personal proactivity and growing maturity as pre-professional nursing students, with an orientation toward future competency and practice.

Nicole, describing the case studies, said that "even if it's just on paper… it really does put you in the clinical setting…. I feel like that helped me in the clinical setting when I got there." Megan echoed, "The flipped classroom was more interactive… it made us think in a different way… it takes book knowledge and puts it in real clinical experiences with case studies."

Gayle thought the flipped classroom "helps you in organizing yourself: thinking about preparing for something ahead of time whether it's walking into a patient's room, reading a book, or in your daily life…. That's half the battle, knowing when you show up, you're prepared. And that helps your self-confidence and your understanding."

4.1.9. Responsibility

Students understood responsibility as a central part of the experience of the flipped classroom. Issues of responsibility were sometimes made in reference to self, to other group members, or the professor. Again, whether responsibility was framed positively or negatively often coincided with the student's learning disposition in the context of the experience. Exemplar statements reflected movements from characteristics of the pedagogical learning disposition, a reactive placement of responsibility for preparedness and teaching on the professor in subject-centered situations, to characteristics of the andragogical learning disposition, a proactive responsibility for self in problem-centered situations.

Keith was not generally positive about the flipped classroom model. He described the early hour as responsible for his being "not ready to put

my full effort forward." He perceived one problem of the model to be that the teacher "should be prepared to teach the students about what we are learning"; and later, that he "didn't necessarily feel like it contributed to our testing." These comments reflect subject-centeredness, inexperience, and dependence, all characteristics of a pedagogical learning disposition. Later in the interview, however, Keith spoke about placing responsibility on himself to access outside resources and other students, demonstrating a move toward characteristics of the andragogical and heutagogical learning dispositions when he said, "I would generally go on YouTube or [use other resources] to help myself engage in the material more, or I would have to rely on other students to help teach me the material if I didn't understand it."

Characteristics of the heutagogical learning disposition were evident in Gayle's description of how the student's responsibility and the teacher's responsibility are inextricably linked: "I really believe that her entire goal is to guide you. I think the idea is for you to take responsibility for your education and learn to apply it. And she is to guide you. We had spoken to this professor a couple of times about, 'Can you help us clarify when you lecture?' And she wasn't willing to. But when you really sat down and you thought about the perspective she was coming from and what she was trying to do, it made total sense and it clicked, at least for some of us. But you had to be at a certain point where you had taken that responsibility. You had figured out what you knew, and what you didn't know. And exactly what you needed help to figure out. Not just come with some broad question because she's not there to give you the answer. She's there to guide you to get the answers."

4.1.10. Expertise

Students' sentiments about responsibility were related to another experiential theme that was very common and recurrent among most of the students, whether they felt positive, negative or neutral about the flipped classroom model: expertise. Many students commented about nursing expertise or experience: their own, their classmates', and the professor's: "… Some people had some [Certified Nursing Assistant] experience. But there were a lot of people that this was the first time they were ever coming into contact with this information, and I felt like it wasn't always good for them" (Carley). Nicole said, "When you're jumping into figuring out what a nurse would do in a certain situation… a lot of people can't wrap their mind around that."

In particular, several students expressed a yearning for the stories of expertise and experience from a seasoned professor that students perceived as missed or lost when students and peers became their own teachers in the flipped classroom model: "A flipped classroom is more student-driven. We do have more freedom and it's not as boring…. But in a lecture classroom, I feel like you get a lot more of [the professor's] knowledge than you do in a flipped classroom. I feel like it's important to respect what the professor's been through. They have credentials, and they have experience. We almost lose that" (Carley).

We believe these comments about expertise and yearning for stories of experience reflect a characteristic pedagogical learning disposition of all new nursing students, inexperience in the nursing role. While they may have experience in other work roles, or may have mastered certain adult learning roles, none has the expertise of a nurse, and so none can share or apply this type of experience in the classroom in a group setting.

5. Discussion

Our study contributes to filling gaps in three categories of understanding: the flipped classroom as a heutagogical model that may facilitate the critical thinking necessary for professional practice; barriers to implementation of the flipped model; and a deeper, richer description of student values and preferences that are an essential component of evidence-based education.

Our study indicated that the flipped classroom model offers promising possibilities for moving students toward the heutagogical learning disposition necessary for professional nursing. The IOM Report identified a need for professional nurses ready to practice "collaboratively and effectively" in a complex, evolving environment. One specific problem the IOM report cited is nurse education curricula and strategies that fail to impart relevant competencies and that add layers of new content (Ironside, 2004; IOM, 2011) rather than promoting the development of skills. Our description of the flipped classroom provides a snapshot of basic strategies that support the heutagogical tenets of self-directed, autonomous learning. Though the content was predetermined by the requirements of the course; students engaged in the pre-learning activities in their own space and time, at their own pace; and then applied the concepts in collaborative, problem-based class activities. Implementation of this model prioritizes "the system-environment interface; and learning as opposed to teaching" (Hase and Kenyon, 2000, section 1, para. 6), and promotes problem-based and self-directed learning (Barrows, 1983) that facilitates critical thinking among learners (Yu et al., 2013).

The identified gap in the description of flipped classroom practices has been a barrier in implementation of the model. A primary limitation of flipping the classroom is in its subjectivity and variability. There are many ways in which a classroom may be flipped, and many different styles of delivery, each unique to the participants. It is difficult to standardize the intervention enough to repeat it beyond the course delivered by a single instructor. In the future, testing specific elements or components of the flipped classroom model with specific content might provide more detailed information about students' experiences of it. Our study helps fill the gap in the description of specific practices in the flipped classroom in nurse education (Hamdan et al., 2013; Moore et al., 2014; Schlairet et al., 2014).

Another potential barrier to the flipped classroom model, illuminated by the qualitative analysis, was student resistance to the unfamiliar method: Students generally were accustomed to a more traditional lecture model and lacked experience with the flipped classroom model. This finding contributes to a richer understanding of previously identified inconsistencies in student satisfaction with the model. Some literature indicated that the flipped model improved student satisfaction (Ferreri and O'Connor, 2013; Pierce and Fox, 2012); some found that it did not (Missildine et al., 2013). In our study, students identified their experiences in terms of discernment, challenge, relevance, responsibility, and expertise. However, our results indicated that even students who were neutral or negative about the flipped classroom model demonstrated and described movement from characteristics of pedagogical learning dispositions toward characteristics of andragogical and heutagogical learning dispositions in the flipped classroom experience (see Fig. 2). These findings provide a more nuanced understanding of the student experience, beyond the concept of *satisfaction* addressed in previous literature.
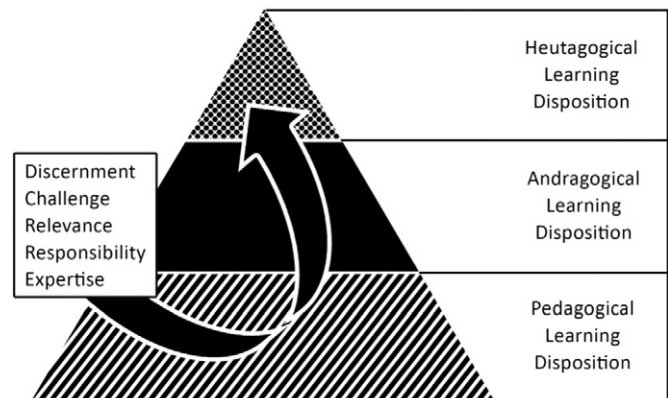

Fig. 2. Movement toward heutagogical learning.

Finally, the qualitative design was chosen specifically for its ability to represent the third tenet of evidence-based practice, client preference and values, an element identified to be often absent in clinical practice and education (Whitehurst, 2002; United States Department of Education, 2003; Comings et al., 2006). We asserted that student values and preferences are, perhaps, the key elements missing in the practice of nurse education, which tends to reflect an outdated, rigid and "highly structured curricula" that are "laden with content" (IOM, 2011). Our study provided insight into student values and preferences in regards to the flipped classroom model. However, any study in which student values and preferences are considered many unique variables may affect the transferability of data. In the future, development of a survey instrument evaluating student learning type might expand the capacity of data collection about student values, preferences, and experiences in the flipped classroom. Furthermore, investigating the experiences of nursing students in other flipped classroom environments would provide a richer understanding of how their learning is affected by the model.

6. Recommendations

Based on our findings, we recommend further investigation of the effectiveness of the flipped classroom model in nurse education and clinical practice, with particular attention to the third supporting tenet of evidence-based practice, student values and preferences. Including this tenet does not require that faculty eschew methods that make students uncomfortable; however it does require acknowledging and addressing barriers that are related to student values and preferences. Considering the student resistance and lack of exposure to the unfamiliar method, we suggest:

- providing students with a detailed description of method, expectations, and potential benefits to prepare them for the challenge of the new model;
- inviting former students to be part of course orientation to reflect on their movement and growth through challenge and discernment that the flipped classroom experience provides;
- providing an avenue for group discussion and clarification of concepts outside the classroom for additional opportunity for discernment, as in a discussion board to be guided and monitored by the professor;
- integrating storytelling into the flipped classroom content to highlight the relevance of content to practice; and to add the "lost" element of expertise;
- using elements of both the flipped classroom and traditional lecture to complement one another, to provide an avenue for clarification of new and complex content, and to create an environment of shared responsibility that may feel more equitable to students; and
- integrating media and activities that will appeal to varied learning types.

7. Conclusion

This study highlights the importance of including student values and preferences as an important component of evidence-based practice in education. While a growing body of evidence exists to confirm the potential value of the flipped classroom for positive outcomes in undergraduate nursing curriculum, it is also important to consider deeper, more nuanced evidence related to student growth in characteristics of lifelong learning, even when students may have negative feelings about a new learning model. We have identified specific barriers to implementation of the flipped classroom model, related to student values and preferences; and recommended specific strategies to reduce those barriers. Recognizing, acknowledging, and addressing barriers related to student values and preferences may be the key element to successful implementation of evidence-based strategies and positive outcomes in

flipped classrooms and other innovative teaching/learning models in undergraduate nurse education.

Table 1. Characteristics of learning dispositions.

Pedagogical	Andragogical	Heutagogical
• Dependent	• Self-directed	• Self-driven
• Reactive	• Proactive	• Autonomous
• Inexperienced	• Experienced	• Self-determined
• Immature to social role	• Mature to social role	• Technologically well-prepared
• Subject-centered	• Problem-centered	• Competency/Outcomes-centered
• Externally motivated	• Internally motivated	• Self-reflective
(Knowles, 1975; Knowles et al., 1984)	(Knowles, 1975; Knowles et al., 1984)	(Blaschke, 2012)

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