

The Flipped Classroom Applied to the Clinical Skills Lab Setting

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Abstract

Faculties are challenged to engage students in their learning. The 'flipped classroom' was implemented in a Fundamentals course skills lab setting because students were frequently unprepared for the weekly sessions and not engaged in the content. Faculty utilized significant amounts of time teaching concepts and specific elements of the individual skills rather than in hands on practice and problem solving. Students' skill performance in subsequent courses was also impacted. This project provided a way to engage students and increase accountability in the content. This article will describe the project implementation, strategies to engage students, and specific outcomes of the project.

Keywords: Teaching strategy; Engagement; Evaluation; Flipped classroom

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Faculties have been challenged to radically transform nursing education to better prepare graduates for clinical practice in the dynamic health care environment [1]. To accomplish this, faculty need to develop effective strategies to facilitate learning and engage students in active and self-directed ways [2]. Some literature suggests a 'sense of urgency', since the Millennial, defined as students born between 1982 and 2002, are comfortable with the rapid changes in technology that impact how they learn [3]. Using lecture only to communicate information is not effective with this age group. The 'flipped classroom' has been described as an effective strategy to accomplish these goals.

In the flipped classroom, students are exposed to the material outside of the classroom and class time is used to reinforce and validate information. Students complete activities such as reading, previewing videos, or other methods to present the material prior to class [4]. Information is no longer presented in lecture format. Instead, class time is used for application, analysis and synthesis of information.

The flipped classroom is not new: It has been used by a variety of disciplines for several years [5]. Adopting this model has been slower in disciplines that traditionally depended on lecture to teach information [5]. While literature exists describing this model in a traditional classroom setting, literature describing the use of this model in the skills lab setting is rare.

Background

The five credit fundamentals course in this baccalaureate program included three credits of didactic, and two credits, or six hours, of clinical practice weekly and was offered in the first semester of the nursing program. The didactic portion focused on the theoretical or scientific perspective related to nursing care of the patient; designated course faculty taught in the didactic portion of the course, and were responsible for the coordination of all other components, including the patient care and nursing skills lab activities [6-9]. The clinical portion was accomplished in two settings: Four hours of direct patient care in a transitional care or long term care setting, and two hours in the nursing skills lab on the campus. Adjunct or part time faculty members were specifically assigned to work in the patient care area with students or in the skills lab. Grading was also different in each portion of the course. The didactic portion was graded based on conventional numerical grades converted to a letter (A, B, C, D, and F); the clinical and skills lab portions together were graded as either 'successful' (S) or 'unsuccessful' (U). This designation was consistent with university nomenclature. Nursing skills lab sections were further divided into small groups of seven or eight students; these groups were often composed of different

students when compared to the direct patient care clinical group. The majority of the hands-on psychomotor skills education and practice in the entire program occurred in the skills lab sessions of this nursing course.

The skills lab faculty observed over several semesters that students were consistently unprepared for skills lab sessions: For example, students had not reviewed the assigned nursing skills in the textbook and were unprepared to practice and demonstrate the skills during the allotted lab time. This resulted in more 'lecture' time by lab faculty to teach the steps of each skill and less time for students to demonstrate the skills or to actively practice for greater proficiency. In addition, there was little engagement between faculty and individual students. Lab faculty also expressed concern about some professional behaviors; despite the attendance requirement, lateness, absences, and scheduling make up time hampered the learning process. Nursing faculty in subsequent upper level clinical courses indicated that some students who had progressed in the program had limited basic knowledge of the required skills, were unable to perform the skills and were unable to critically reason and problem solve in the patient care area.

The faculty involved in all parts of the foundations course agreed that a dramatic change was needed. A review of the literature about teaching and learning in undergraduate nursing programs lead to information on the flipped classroom. Faculty in this program believed the flipped classroom in the skills lab had the potential to increase student accountability and autonomy for psychomotor skills, enhance student engagement in the specific lab sessions, and foster self-directed learning in fundamental nursing students [2].

Groundwork for Implementation

A six month time line was developed for the planned implementation in the nursing skills lab. Since faculty had different levels of understanding of the 'flipped classroom', a course meeting was held at the beginning of the planning phase with all faculty in the course to describe the concept and identify the specific steps toward implementation. Additional resources, such as articles and webinars, were also identified for faculty. The Institutional Review Board application for the project was approved as well.

At this time, lab faculties were surveyed about their current experience in the lab, anticipated rewards and challenges, and ways they could facilitate successful implementation of the project. Some faculty voiced concerns about the impact of the flipped classroom on their personal teaching evaluations completed by students. They wondered if students would think faculties were no longer really teaching. Most faculties, however, anticipated they would be more of a mentor for students in the lab, guiding their progress rather than traditional time spent with instruction. Lab faculty hoped that holding the students more accountable for their own learning would be an incentive for increased self-directed learning.

Implementation of the flipped classroom

In the fall semester, the concept of the flipped classroom and expectations for students were outlined as part of the orientation to all parts of the fundamentals course. After attending the didactic portion at the beginning of the week, where theoretical and scientific rationale for selected skills was highlighted, students worked independently to complete the specified learning activities prior to their skills lab session. These activities include viewing assigned skills videos, reading assigned articles/journals and/or reviewing textbook procedures to prepare for skills practice. Students were required to identify and outline on an 'index card' five critical steps in each skill procedure for that particular week. In addition, prior to attending lab, students prepared to demonstrate each skill.

To more objectively evaluate student performance and encourage participation and engagement, course faculty developed a point reward system for all skills lab preparation and performance evaluations. A minimum number of accumulated points were established for successful completion of the course and this was communicated to students as part of orientation and in the course syllabus. Students earned points for a variety of activities including professional behaviors i.e., attendance, punctuality, professional attire and having the appropriate tools to perform skills effectively (i.e., stethoscope, watch etc.) Students who did not meet these basic professional requirements were not allowed to participate in the skills lab session and received no points for the day. In addition, students earned points for skill preparation, and for completion of required assignments. Once a skill was performed independently and appropriately, the student earned additional points. Several times throughout the semester students earned points through 'pop quizzes'. The quizzes were given at the start of lab session and were limited to five multiple choice or alternative style questions. Points were awarded based on the number of questions answered correctly. Finally, all students who reached a pre-determined point level were entered into a lottery for an NCLEX review book or t-shirts.

Evaluation of the flipped lab project

Several strategies were used to evaluate the flipped lab project. One evaluation was obtained from the skills lab faculty. Using a paper and pencil survey, skills lab faculty provided feedback on the flipped lab implementation after the first semester. Responses from faculty were extremely positive. Skills lab faculty stated that students arrived more prepared to initiate skills practice. They also stated students' asked "good questions" for clarification of application and not simply procedural steps. Skills lab faculty said the students' note cards demonstrated evidence of critical reasoning and that students were eager for quizzes to increase individual course point total. Faculty also noted students' punctuality and professionalism had greatly improved. The lab session for only one student needed to be rescheduled due to tardiness. This was described as '...a huge improvement over previous semesters'.

Student evaluations were also used to assess the success of the flipped lab. Student evaluations reflected satisfaction with the

course and with faculty performance. Students described faculty as engaged, approachable and supportive of student learning. Students also describe the time in the lab as valuable rather than wasted time.

Feedback from clinical faculty in the fundamentals course as well as from other clinical courses in the program was also included in the evaluation process. Using a 4-point Liker scale, faculty assessed current readiness of students progressing from the fundamentals course to perform clinical skills. These skills included professional behaviors, maintaining a safe environment as well as psychomotor skills such as oxygen administration, tracheostomy care, medication administration, catheterization and use of intravenous technology. These faculty, including medical-surgical, pediatric and maternal-child faculty, were surveyed prior to the flipped lab implementation and again at the completion of the first semester. Only 12 of 48 clinical faculties responded to this initial survey; most of these respondents were faculty in the second semester course, i.e., the medical-surgical nursing course. The clinical faculty reported that students used critical reasoning to collect data and evaluate interventions. However, faculty reported that students fell short on proficiency in performing individual nursing skills and accountability for their actions [10,11].

After the flipped skills lab was in place for two semesters, the clinical faculty from the fundamentals and medical surgical nursing courses were again asked for feedback on student performance in the patient care area using the same Liker survey. Since response rate was low previously, surveys were distributed via email this time to improve response rate. However, about the same response was achieved for each of the following semesters.

The data revealed that students were consistently more organized and more professional; furthermore, accountability for skill performance in the clinical area had also improved. Faculty reported that students were more proficient in maintaining a safe environment and documenting nursing interventions. Performance of individual nursing skills had also improved slightly [12,13].

The Liker survey was distributed to faculty in clinical courses for a total of four semesters. Although the evaluation data did not reflect a statistically significant change, faculty did note a practical change: Professional attitude improved and students demonstrated increased clinical confidants.

Project Outcomes

Several specific outcomes were revealed as a result of the flipped lab project. Students demonstrated more accountability for their own learning for each skills lab session. Student satisfaction with the skills lab course remained positive, and engagement with the faculty and the nursing skills activities improved as well. Lab faculties appreciated the more engaging environment and were more satisfied in their teaching role in the nursing skills lab. Although nursing skill intervention performance in the patient care area in subsequent semesters did not improve dramatically, this may be related to limited opportunities to repeat and perform nursing skills in patient care environment. This finding may suggest the importance of implementing more simulation activities into all clinical courses, where skills can be repeated and proficiency can be validated. The flipped classroom model for the nursing skills lab improved student attitude and professionalism, promoted accountability for learning and enhanced student faculty engagement in this setting.

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