

“Try It” Mini Grant December, 2014 Report

Title of Project:

Using Immediate Feedback in the Nursing Classroom to Improve Student Learning Outcomes

Grant Recipient:

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Grant-related Preparation

In preparation to use the Immediate Feedback Testing Assessment (IF-TA) forms, 8- 30 question case studies and 3 exams were formatted to correspond with the forms prior to the start of the semester. Students used the forms in small groups consisting of 3-4 students for both in class case studies and group testing immediately after the exam. The case studies constituted 8% of their course grade. Participating in group testing after the exam provided students with a small amount of extra credit on their exam depending on how their group performed on the exam (higher scores = more points and low scores = very little or no points). Additionally, 4-6 questions for each course lecture were programmed into Poll Everywhere for use during class. The initial plan was to have students complete all 8 cases in groups using the IF-TA forms and then to use Poll Everywhere to “retest” items from the cases that were “highly missed” the week before. The IF-TA forms were used in 3 classrooms for the Essentials of Therapeutic Nutrition courses (NURS 377-01, 377-02, and 378) with approximately 175 students over the course of the semester.

Barriers Incurred During the Fall Semester

I incurred several barriers during the fall semester that required “adjustment” of the original plan. First, students actually completed 7 of the 8 cases that were prepared rather than all 8. This adjustment was made to accommodate changes in the classroom lecture schedule due to various circumstances. Second, students were not responding to the regular Poll Everywhere classroom room polls and therefore, “highly missed” case study questions were not assessed the next week as originally planned. Several classrooms that I taught in have difficulties with internet and cellular access. Because there were so many delays in the Poll Everywhere system recording the responses in a timely manner, students lost interest quickly in even responding to them. By the end of September, the use of Poll Everywhere was abandoned as it was creating more difficulty for students and the classroom atmosphere. Third, the “highly missed” items on the case studies tended to be questions that were not directly related to the course. Although the case studies contained some concepts related to the course content, there were often questions in cases that were from prior courses and reviewed previous knowledge and concepts. The vast majority of the “highly missed” questions in the cases were related to knowledge gaps in the nursing process, pharmacology, pathophysiology, health assessment, and nursing fundamentals. All of these areas are courses that the students completed as pre-requisites for the Essentials of Therapeutic Nutrition course and I had not budgeted in classroom time to reteach content (such as this). The last barrier I encountered was related to grading of the cases. Since the majority of the questions missed on the cases were not related to classroom content, I graded the cases as “completion” only in order to reduce the stress of activity. However, after a few cases, it became apparent that

students were just rushing through the cases because it didn't matter how many they missed and it was taking about 45 minutes to complete them. Toward the end of the semester, I started taking grades on the cases and then allowing the students to repeat the cases individually online if their group grade was not as expected. The intent of the cases was to use them as a teaching tool and not to penalize students; therefore, I felt that the process of retaking the cases online was more beneficial in providing the students additional opportunities to practice their application and critical thinking skills.

Outcomes Related to Repeating Items on Exams

Since repeating highly missed questions on the cases that were related to current classroom concepts was not evaluated using the Poll Everywhere system, several questions were placed on exams in order to assess the student's mastery of the concepts. Additionally, 2 test questions with less than 50% of the class scoring correctly were repeated on the subsequent exam. A sample of results is below. Overall, student performance did improve but I saw more improvement on concepts earlier in the semester than later in the semester.

Content: Cases	Case Study Result	Test Score Result
PEG infusion	44% correct	78% correct
When to hold feed	36% correct	72% correct
Holding feeds	36% correct	83% correct
Multidisciplinary team approach	4% correct	99% correct
Pancreatitis weight assessment	56% correct	58% correct

Content: Test Item	% Correct First Time	% Correct Subsequent Exam
Folic Acid: Exam 1 → Exam 2	40%	100%
IVF's TBI: Exam 2 → Exam 3	42%	43%

Qualtrics Survey Results

In mid-November, I launched a survey on Qualtrics in order to receive anonymous student feedback on the use of the IF-TA forms. I did not include any questions related to the Poll Everywhere since we had not used it consistently. The questions were developed from the objectives of the original grant proposal. Below is a chart of the question and responses. A 5-point Likert scale was used with 1 = Strongly Disagree, 3 = Neither Agree nor Disagree, and 5 = Strongly Agree.

Question (Abbreviated format)	Mean	SD	N
Forms were easy to use	4.32	0.9	85
I liked using the forms after exams	4.05	1.11	85
Using forms after exams helped correct misconceptions	3.72	1.14	85
Using forms after exams reduced anxiety about the exam	3.52	1.16	85
I liked using the forms for in class case studies	3.92	0.99	85
Using the forms for case studies increased my confidence in answering NCLEX style questions	3.55	1.02	85

Using the forms provided me with opportunities to practice critical thinking	4.01	0.84	85
Using the forms provided me with opportunities to synthesize nursing concepts	3.85	0.9	84

The Qualtrics survey offered students an opportunity to “free-write” any comments they had about the use of the forms. Twenty-one students left comments: 11 were favorable, 5 were non-favorable, and 5 comments were neutral (not indicating favorability or not). A few students indicated that using the forms after exams was more anxiety provoking while others really enjoyed finding out right away what the correct answer was. However, a few students did indicate that the IF-TA forms were fine for finding out the correct answer, but that rationales were still not available. The majority of students did like using the forms for in class case studies and working through the cases (that proved quite difficult) in class with the forms.

Discussion

Overall, I have really mixed feelings about the results of the project. I do not believe the IF-TA forms really helped students learn or correct misconceptions. I believe the reason is because the IF-TA forms do not provide any rationales. Although they tell the student whether or not they chose the correct answer, they really do not learn why the answer is correct or incorrect. I think this is true for both the case studies and the post-exam group testing activity. The IF-TA forms did provide opportunity for students to review the exam in a controlled manner, however. Barriers exist in exam review including 1) civility and arguing with faculty and 2) getting students to attend exam review. The IF-TA forms addressed both of these issues.

I do think the IF-TA forms were helpful for the in-class case studies. However, the cases took students about 45 minutes to complete and there was very little time to review (in class) questions about the cases. A better way to use the IF-TA forms would be to either reduce the number of cases in totality (freeing up more classroom time to review the whole case) or to shorten the cases to 10 questions each (with truly pertinent content). The case studies are a package purchased by the student and required for the nursing courses; therefore the cases would need modified to shorten them.

I also believe the IF-TA forms provided the students opportunities to practice questions in class with a group of peers. NCLEX-style nursing questions require practice in order to understand how to answer and take the question. The more opportunities the students are offered to practice these questions, the more comfortable they become with them. Additionally, it became very clear to me that students continue to require exposure and practice when it comes to reviewing previously learned concepts from prior classes. Using the IF-TA forms allowed me to observe this gap in their progression in the program.

Conclusion

At this time, I do plan on continued use of the IF-TA forms for in class case studies to facilitate my modified flipped classroom approach. However, I will likely either reduce the number of cases used in the semester or I will shorten each case to 10-15 most pertinent questions. I will

also continue to use the IF-TA forms for group testing after the exam with one adjustment. After the completion of the group exam, I will allow additional class time to review rationales to test questions the students missed. This is going to require me to adjust classroom activities, however, and place more content as a recorded lecture in order to free up additional classroom time for the discussion of rationales. Thank you again for the support you provided for the purchase of the IF-TA forms.