Nursing-WID Project Report **June 2015**

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Exam Preparation and Clinical Decision-making in the Dawson Nursing Program

A. Introduction

Graduates of all nursing programs in Canada are required to write a licensing exam at the end of their studies in order to practice their profession. In recent years, changes have occurred both within the nursing department at Dawson and external to the college that lead us to believe we needed to take a closer look at what we are doing as a faculty to help students get ready for this exam. Some of these changes include the format and complexity of the exam that is set by the Quebec Order of Nurses, faculty renewal and perhaps most important, a progressive decline in the success rate of our students on the exam over the last several years.

Recently, there has been a change to the format and complexity of the nursing licensing exam administered by the Quebec Order of Nurses. The exam has evolved from a combination of practical and written components to a written exam only. The exam questions situate graduates of our program in a clinical situation and their answers must reflect the use of critical thinking in solving the clinical problem. The complexity of the clinical situations has become more ill-defined and in fact is a better reflection of what the students encounter in clinical practice. In becoming more complex, the skill-set that the students are required to call upon has changed. The clinical scenarios are longer and so students need to be more fluid readers and able to give meaning to the information they are reading as they read it; they need to be able to quickly sort through what is relevant information from what is not so that they can make a clinical decision.

The initial move from a multiple choice format licensing exam to a short answer question and practical exam format was just prior to the new millennium. At the time there was support available to faculty to assist in the development of both sort answer questions and practical situations. These two assessment formats quickly became the primary means of evaluating our students at Dawson College. Since that time, there has been approximately a 50% faculty turn over meaning that 50% of our faculty who were supported, trained and became experienced in the development of short answers exam items have left. Although eager and motivated, we have several new faculty members with limited knowledge and experience and who must be mentored in the development of writing exam items.

In the past, our success rate on the licensing exam has hovered in and around the mid 80% level. In the last four years we witnessed a steady decline in those results to approximately 70% and then in September 2014 the success rate was less than 50%.

Our final objective was to help students develop the ability to communicate their clinical reasoning in writing in order to perform well on the licensing exam. Given our goal, our obvious ally was the Writing in the Disciplines (WID) initiative at the college and so we applied for course release in the form of a WID-sponsored departmental project for W2015. Throughout the W2015 semester, we benefited from the mentorship of WID Co-directors Ian MacKenzie and Anne Thorpe, who worked with us to define and then achieve the objectives of this project.

B. Methods

Although ambitious, we felt it was important to address both what we as a faculty are doing to help student prepare for the exam and what students are/should/could be doing to prepare.

The primary means we used to determine what faculty is doing to prepare students was a review of written assessments across the three years of the program. Permission to review exams with accepted answers for the terms Winter 2014 and Fall 2014 was

requested from each of the teams. Exams were reviewed for level of thinking using Bloom's taxonomy, and observations related to the structure of questions, the clarity of the questions and the terms used in the questions. All 180-111 exams were reviewed by both of us to ensure inter-rater reliability with identification of level of thinking for exam items. Once we established that we were consistent, the remaining exams were divided and each exam was reviewed by one of us.

Although we knew that it was important to somehow address/consider the students' approach to preparing for the exam, we were not sure how to do this. In discussion with our WID mentors, we decided to use a "Think aloud" protocol for a pilot study to determine what thinking processes the student engage in as they read and solve a clinical problem in a short answer test situation. Based on the results of the pilot study, we would reflect on what should be done to help the students prepare.

We contacted several graduating students through MIO to determine their interest in participating. From the sample who expressed interest, we selected three students of differing ability (with A, B and C clinical/academic marks).

We selected three clinical situations from the Quebec Order of Nurses Exam Preparation Guide and their associated questions. We also developed a warm-up clinical situation with questions; providing students with an opportunity to practice "thinking out loud" before they answered the test questions.

Students were instructed to read questions out loud and say all that they were thinking as they read each question and tried to formulate an answer. In order to eliminate outside influence particularly as it relates to the students' feeling that they were being assessed by their nursing teachers, we were not present. The two WID mentors moderated the sessions; students were aware that the mentors were not qualified to assess their answers. Students were told that how much they said or did not say was not important – rather, it was the verbalization of their stream of thought that was of interest. Silence from the student for more than 30 seconds during the session resulted in a prompt to continue speaking from a WID mentor. The sessions were taped.

All data were then coded using a coding system for clinical decision-making developed by Ham et al (2007). The written answers the student provided were also graded using the answers provided in the Quebec Order of Nurses Exam Preparation Guide (OIIQ 2011).

C. Results and Discussion

The Exam Review

See the table for the findings related to level of thinking of exam questions across the program.

With respect to the level of thinking of exam items, there are a couple of things that are worthy to note. First, based on the application question percentages that were established several years ago by the department when significant work was done to improve our ability to generate short answer exams (50%-80%-80% application by the end of 1st, 2nd and 3rd year respectively), we fall short of this goal. Also, when you look at the data, from one exam to the next within a course and from one year to the next, the percentage of application questions does not increase steadily but instead increases and then decreases. During the renewed curriculum discussions regarding short answer exams, faculty should determine what percentages of knowledge, comprehension and application questions are adequate in each of the courses to prepare students for the next course and ultimately for success on the OIIQ exam. The second observation worthy of note is that in some situations where there are two version of the same exam (for example, Section #1 and Section #2), the exams did not have the same number of knowledge, comprehension and application questions and in some cases the difference was significant potentially making the level of difficulty of the two versions inconsistent.

With respect to the structure of exam items, we made the following observations that faculty may wish to discuss. First, we discovered several question formats that were written to look like short answer questions but were in fact something different. These include true-false, mix and match, fill in the blank and multiple choice questions. The content of the questions was relevant however the format is not consistent with what students will encounter when they write their licensing exam. Do nursing faculty believe

these types of questions are acceptable in a short answer exam? Second, there were several questions that when written, were perhaps intended to be application level questions as they were connected to or came under a situation. However the questions did not need the situation to be answered; they were stand-alone knowledge level questions. In addition, some questions were clearly application level questions based on how they were phrased however the accepted answers were standard actions/answers and were not particularized to the context described in the situation. Many of these are questions that can be easily revised to the application level.

When reviewing the exams, we noted several strengths related to how the questions and answers appear on the answer sheet. These include reference pages for accepted answers, a list of both accepted answers and those answers that are not accepted and why, the grading schema for the complete answer to the questions and for multiple part questions (ie: A. B. questions), statistics related to student performance on questions from previous semesters, and in one course, the competency and element being tested and the level of thinking of the question was provided. All of this information provided on the answer is beneficial for our department who are always in the process of building a bank of good quality questions and integrating new faculty members, and for the student who is reviewing the exam.

With respect to some of the terminology used in the exams across the program, we noted inconsistencies (“adverse effects” versus “complications” related to medication where both questions were looking for adverse effects according to the answers provided) and some situations that may be misleading for the student (the question asked for potential SCDs but the accepted answers was a list of potential problems or clinical issues). Some of these inconsistencies and the use of potentially misleading terminology can perhaps be addressed by having a group of faculty members from all courses whose job it would be to meet on a regular basis to review exams.

Results

COURSE	TESTS			KNOWLEDGE	COMPREHENSION	APPLICATION
111	CT1	Sec 1	41 questions	28.5 (69.5%)	7 (17.1%)	5.5 (13.4%)
			Q0: 4 questions	4 (9.8%)		
		Sec 2	41 questions	27 (66%)	7 (17%)	7 (17%)
			Q0: 4 questions	4 (9.8%)		
	CT2	Sec 1	40 questions	25 (62.5%)	9.5 (23.8%)	5.5 (13.7%)
			Q0: 4 questions	3 (7.5%)		1 (2.5%)
		Sec 2	40 questions	27 (67.6%)	6.5 (16.3%)	6.5 (16.3%)
			Q0: 4 questions	3 (7.5%)		1 (2.5%)
	Final		68 questions	37.5 (55.1%)	7 (10.3%)	23.5 (35%)
			Q0: 24 questions	15 (22%)	3 (4%)	6 (8%)
212	CT1	Sec 1	36 questions	17 (47.2%)	4 (11.1%)	15 (41.7%)
		Sec 2	36 questions	16.5 (45.8%)	12.5 (34.7%)	7 (19.4%)
	CT2	Sec 1	32 questions	16.5 (51.6%)	10.5 (32.8%)	5 (15.6%)
		Sec 2	32 questions	16 (50%)	11 (34.4%)	5 (15.6%)
	Final		70 questions	39.5 (56.4%)	19.5 (27.9%)	11 (15.7%)

323	**CT1**	35 questions	12.5 (35.7%)	5 (14.3%)	17.5 (50%)
	CT2	35 questions	8 (22.9%)	4.5 (12.9%)	22.5 (64.3%)
	CT3	35 questions	13.5 (38.6%)	13 (37.1%)	8.5 (24.3%)
	CT4	35 questions	8.5 (24.3%)	14 (40%)	12.5 (35.7%)

424	**CT1**	50 questions	21.5 (43%)	8.5 (17%)	20 (40%)
	CT2	50 questions	9.5 (19%)	12.5 (25%)	19.5 (55.7%)
	CT3	45 questions	12.5 (27.8%)	15.5 (34.4%)	17 (37.8%)

515	**Mid Term**	65 questions	13 (20%)	17 (26.2%)	35 (53.8%)
	Final				

600	**Mid Term**	64 questions	10.1 (15.8%)	18.3 (28.6%)	35.5 (55.5%)
	Final	68 questions	24.5 (36%)	10 (14.7%)	33.5 (49.3%)

“Think Aloud” Pilot

Quantitative analysis of the students’ written answers revealed a failing performance overall by all three students. Students may have passed individual clinical scenarios but had a global failing grade on the combined scenarios.

Qualitative analysis of the taped interviews revealed several findings. First, skill in reading was important. The more fluid the reader, the more time the student had to make meaning of the information and formulate an answer. Second, in situations where the student lacked knowledge about the health problem (all of which are identified by the Order of Nurses as “tracer cases” for the Quebec population), they had difficulty answering the questions. Finally, we noted that students did not consistently use an organized framework for making clinical decisions. Although students noticed, compared and gave meaning to significant pieces of data, they did not consider multiple pieces of significant data and their relationship to one another. Students often tried to answer the question without looking at the entire situation; they focused on specific data and then ignored other significant pieces of data. The “A” student was better able to consider multiple pieces of data and discuss the relationship among them. With the exception of “A” student, they did not go back and re-examine the data as they tried to generate an answer. Student did not discuss options or other interpretations of the situation.

In discussion with our WID mentors, we have generated several strategies to address our findings from the “Think aloud” pilot. These include the following:

- Make students aware that thinking processes they engage in when writing exams should be the same as in clinical.
- Promote reflective journal writing about preparing for, writing and reviewing exams (making students more aware of how they prepare for exams and what is working).
- Use the “Think-aloud” protocol as an exam reviewing strategy (when students review their performance on graded exams).

- Provide patient information for clinical in the form of a narrative (so that it looks more like a clinical scenario on an exam).
- Vary the nursing care plan assignment with more of a focus on decision making.
- Design prompts for reflective writing that focus on critical thinking about the decision the student made in clinical.

D. Conclusion

The opportunity to look at the “big picture” and review exams from across the program has allowed us to see the value of adopting a department exam policy. We identified strengths in each team’s approach to the development of exam items and we can see how the work of all teams can be enhanced through the sharing of these practices, many of which are described in the proposed exam policy.

The “Think aloud” pilot validated our ideas about the approach we think students should be taking when answering short answer questions. What we also discovered is that students are not consistently using this approach and that there is much work to be done to help them learn how to read questions judiciously, interpret the question and use critical thought to determine the answer. Their answer must be written in a manner that communicates the approach they have taken to solving the problem.

At the end of the W2015 semester, we had an opportunity to share our work with the faculty. As a result

- The department has now adopted a comprehensive exam policy.
- The department has committed to exploring clinical decision making frameworks with the intention of selecting one and implementing it in the program.

E. Resources

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