# Inquiry Demonstration Plan

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| **Lesson Title:** | Review of Breathlessness | **Workshop #** | 1 | **Date:** | 23 July 2020 |
| Name: | Iliana Musinova | Subject(s): | RTCT 3110 | Grade(s): | Third Year University |

Rationale & Overview

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| **Why does this topic matter to students?**  Students made a conscious decision to begin a career in respiratory therapy (RT). One of the responsibilities of an RT is to interview patients with the aim of understanding the cause of their shortness of breath, perform appropriate tests to confirm suspected diagnosis, educate patients about their disease and its management. This makes the topic very important to the students.  **How does this lesson fit within the larger inquiry project?**  This lesson is one out of four in this workshop dedicated to the topic of breathlessness. The larger inquiry project would be the incorporation of this topic to solve complicated cases using critical thinking by the end of clinical year.  **How does this project incorporate the inquiry cycle?**  **Ask** questions to establish the cause of breathlessness through the process of elimination.  **Investigate** the cause of shortness of breath by performing appropriate diagnostic tests.  **Create** a treatment plan of action for the patient scenarios.  **Discuss** findings with group members.  **Reflect** on the questions asked and how they could have been improved based on the patient’s answers. Share personal experiences and build new learning. |

Key Questions for Inquiry

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| Core Question & Supporting Questions for Inquiry Project | Question(s) Addressed in This Lesson |
| **Core question**:  “What makes assessing shortness of breath so challenging in real life situations?”  **Supporting questions:**   1. How can we use interviewing to gain an understanding of the cause of breathlessness? 2. What are the advantages and disadvantages of questioning the patient vs. performing diagnostic tests? 3. How do I know that I am asking effective questions? 4. What are my limits in knowledge about breathlessness? 5. How might we prove/justify the patient’s cause of breathlessness?   The questions were created using Wiggins & McTighe’s (2005) Six Facets of Understanding guide. | Students come with pre-existing knowledge; therefore, provide students with an opportunity to ask questions to deepen their own understanding.  The core and supporting questions will be covered each class but the cases will increase in difficulty in order to help students see situations from different perspectives and answer these questions differently based on the patient presentations. |

**Inquiry Approach and Rationale**

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| The inquiry approach that is most suitable for my scientific topic is discipline-based inquiry as described by Friesen et al. (2015) in the Galileo Education Network. This inquiry approach to education is a fitting one because my students completed the didactic portion at TRU and in their current clinical year they have the opportunity to incorporate theory into practice. “Putting it all together” can be challenging because students have to consider hospital policies, multidisciplinary intervention, building relationships with patients and assessing a real patient. These skills along with critical thinking skills can only be developed if the students are able to ask questions with the aim of exploring, investigating and acquiring information that can be implemented into diagnosis and treatment plans that are effective. Nickerson (2016) writes that case studies are an opportunity to “flag an issue of importance and to share a clinical experience with other professionals, and have particular importance for rare, or high-risk, low-probability events, as well as for new innovations that are not fully formed.” (p.2) |

Core Principles of Effective Teaching (Sharon Friesen)

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| **Core Principle 1:** Effective teaching practice begins with the thoughtful and intentional design of learning that engages students intellectually and academically.  *\*What aspects of the inquiry are the most challenging and meaningful for students?* | The most challenging part of clinical year is gathering pertinent information and interpreting it with the aim of providing quality, patient centered care. Students struggle with this process. The sessions will build on the student’s prior knowledge and encourage sharing of ideas with the interdisciplinary team. (Friesen, 2009, p.4) |
| **Core Principle 2:** The work that students are asked to undertake is worthy of their time and attention, is personally relevant, and deeply connected to the world in which they live.  *\*What makes this inquiry valuable, meaningful, and “alive” for the students and teachers?* | RT’s encounter patients with shortness of breath on a daily basis. By competently determining the source, RT’s will be able to make recommendation about and involvement in diagnosis, treatment and education. At this point students have a strong factual knowledge base (Friesen, 2009, p.5) |
| **Core Principle 3:** Assessment practices are clearly focused on improving student learning and guiding teaching decisions and actions.  *\*How do I define learning and success in this inquiry? How is learning expressed and articulated in peer, self and teacher assessments?* | - Students are able to recognize their limitations in knowledge and ask for help.  - Students are to communicate with the interdisciplinary team effectively and reason their ideas  - Student must ask for additional appropriate information about the patient and recommend diagnostic tests.  - Students must identify opportunities for growth and teachers provide constructive feedback. Students must provide feedback to their group members based on their presentations (Friesen, 2009, p.5) |
| **Core Principle 4:** Teachers foster a variety of interdependent relationships in classrooms that promote learning and create a strong culture around learning.  *\*How do I connect students with each other, with experts in the field, with larger communities and nature, and across disciplines?* | - Students will work in groups and develop relationships with their peers.  - Teacher used as a resource to answer questions of each student and thus developing a pedagogical relationship.  - Students will consult with nurses, physiotherapists, dieticians and doctors and develop interdisciplinary relationships.  - Eventually students will work with patients and as a result developing relationships with the community |
| **Core Principle 5:** Teachers improve their practice in the company of peers.  *\*How do I reflect on the inquiry together, and/or collaborate with others?* | - Ask students for feedback  - Connect with other clinical site coordinators (CSC) around the province.  - Work closely with the students and CSC at St. Paul’s hospital to share resources and educational experiences.  - Attend other hospitals and exchange knowledge with clinical educators.  - Professional forums that discuss educations strategies  - Every Friday I set out 30 minutes where I reflect on my educational strategies and list areas of strengths as well as areas that need improvement. |

Respiratory Therapy National Competency Framework

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| Core Competencies | |
| B1: Demonstrate professional behavior B2: Communicate Effectively B3: Collaborate in the interprofessional health care team | B4: Optimize cardio-respiratory health and wellness in the community B5: Demonstrate critical thinking and reasoning skills C2: Optimize patient safety |

Big Ideas (STUDENTS UNDERSTAND)

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| Students must assess the patient as a whole using a multi-system approach: central nervous system, cardiovascular system, respiratory system, gastro-intestinal and gastro-urinary systems. Students must understand the interconnectedness of body systems and be able to identify the cause of symptoms based on presentation. Students must be able to relate the effect of medication on the body, understand the role of the RT and the therapies that can be implemented. Students must understand the impact that the therapist has on the body and how to intervene in an emergency situation. |

Learning Standards

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| **(STUDENTS DO)** | **(STUDENTS KNOW)** |
| Learning Standards - Curricular Competencies | Learning Standards - Content |
| Patient history, physical respiratory assessment, oximetry, treatment plan: pharmacology, physical therapy, oxygen therapy, secretion removal; CXR interpretation, interpret electrolytes and labs, participate in rounds/ report, spirometry, breathing techniques. | Students must have pre-existing knowledge from didactic portion of the program and should be prepared to incorporate knowledge into practice. |

BC Curriculum Indigenous Connections/ First Peoples Principles of Learning

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| *How will I incorporate Indigenous knowledge and principles of learning?*   1. *Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors*. The ultimate purpose of the workshop is to help establish respiratory therapists who are going to assess, treat and educate patients about breathlessness effectively to improve their quality of life. I think we can all agree that generally one sick family member affects the whole family so if breathlessness can be treated then patients are more likely to be active and spend time with family, are able to work and contribute to the community and enjoy the land. 2. *Learning involves recognizing the consequences of one’s actions.* By working through case studies, students will develop a deep level of understanding of how their actions (or inaction) can affect the health of their patients. As a result the students may be more motivated to practice and learn to provide quality care. 3. *Learning is embedded in memory, history, and story.* This point is covered from a slightly different point than is meant: students need to learn and know anatomy, physiology and pathology before they are able to understand diagnosis and progression of disease (*memory*). The patient’s past medical history, family history, and social history all may have an impact on presentation (*history*). Lastly, the patient’s story of events that took place is extremely important as it could give the respiratory therapist cues into what may be going on (*story*). 4. *Learning involves patience and time.* I think that this is an important point to remember for the educator and for the students because people can become frustrated when they lack understanding. (First Nations Education Steering Committee, n.d.). |

Respectful Relations

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| *How will I invite students of all backgrounds, interests and skills into the inquiry?*    Many of my students have previous university training so everyone will be invited and encouraged to share their experiences with breathlessness, the actions they took or had seen taken, and reflect on their experiences.  As the facilitator, begin the conversation about cultural differences and their perceptions of the questions that are asked. Share that patients may not feel comfortable sharing their health concerns so the interview space may need to be private, ask questions respectfully and ensure that the patients know that we want to help them without judgement. Students will be invited to share their knowledge of culture and health practices. Interdisciplinary students will also be encouraged to share their knowledge with the aim of collaborating and viewing cases from different perspectives. We will also have an elder speak about native health practices and beliefs to bring students awareness and understanding of differences. |

Lesson Activities

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| Time Allotted | | Teacher | Students |
| Invitation | 45 mins | Introductions, “Vegas rules”, respectful workplace, show video of emergency room case where RT had to troubleshoot the cause of SOB and show students the importance of the topic. Establish knowledge gaps through short Kahoot quiz, Conduct a needs assessment by inviting students to share what they would like to review and practice (do a gallery walk) | Introductions and share one thing they want to take away from the session.  Ask questions (type in chat if online) or write with markers on big charts during a gallery walk. |
| Inquiry  (Allocate breaks as per group requirements) | 1.5 hrs | Go through a couple of case studies as a group and set the expectations through the example.  Split the class into groups of 3, hand out case scenarios and have them work together to solve the scenarios. Teacher is available as a resource to clarify or answer any questions.  Teacher will be the time keeper | Students will participate by asking questions that will help in their diagnosis of the problem.  Students can work as a group through the scenarios. They may utilize resources and the teacher for any questions. |
| Reflection | 30 mins | Independent time when each student can think about their case, ask question that they want to explore | Reflect on the cases and ask if the group solution was the best solution, come up with questions that they have, think about personal understanding of the case. |
| Discussion | 45 mins | The class will come back together and each group will discuss their answers for their scenario. Teacher acts as a facilitator, encourage questions, clarify ideas and fill in knowledge gaps. | Students discuss their answers with the whole group. The rest of the class will provide feedback, ask questions and suggest alternative solutions/ courses of action. |

Materials and Resources

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| Computers, textbooks, class notes, printed scenarios, PowerPoint Presentation, markers and massive paper for gallery walk. |

Organizational Strategies

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| Book open space classroom with tables and chairs, have masks and hand sanitizers available for all students, maintain social distancing while working together, keep in mind company policies. |

Proactive, Positive Classroom Learning Environment Strategies

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| Everyone will be invited to participate in small and big group discussions. If students feel more comfortable working on scenarios alone, this opportunity will be provided to them before we take up the scenarios as a big group. |

Reflections

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| I designed the workshops to be extended over 4 days and lasting 4 hours each including breaks; however, since the lesson demonstration was limited to 45 minutes, I did not include small group work at this point. This was a good example of time restrictions that a teacher practicing inquiry based approaches would experience in real life as described by Scott et al. (2018) and Cain (2018). My audience did not know about my profession so we began the session by watching a video about the work a Respiratory Therapist does. My reflection points:   * I used analogies of things that my audience may encounter in real life. For example, a balloon represented the air sacs (alveoli) of the lungs to help visualize what smoke did to the lungs. Another analogy that I used to help the audience understand asthma is to imagine what it would be like to breathe through a straw. This helped my audience better relate to the topic and without necessarily having a lot of scientific background. For me it was encouraging seeing their facial reaction go from blank to “ohhhh, I get it”. I think that as a teacher it is important to also read the mood in the room and judge whether the participants understand the material. If not, deliver it in a way that makes sense to the learner. * I asked open-ended questions and encouraged the audience to answer even if they were not respiratory therapists. They were able to relate the questions to their lived experiences and that served as the base for the discussions we had. After the students were able to establish a relationship between their knowledge and experience, I was able to fill in the gaps they had to complete understanding. Bai (2015) writes that “the most valuable aspect of inquiry is gaining perspective”; therefore, a group of individuals exchanging ideas is essential.  (p.26). I think that in this inquiry lesson I was able to facilitate enough to allow my learners to see a new perspective and share personal ideas. * I was unable to practice using Big Blue Button beforehand and as a result was not able to screen share where I could have my audience do a Kahoot quiz unfortunately. In the past I have used Zoom for this with success so if I was to do my workshop online, I would get familiar with the delivery platform before the scheduled class. However, despite not being able to do the quiz in an interactive manner, I still did a needs assessment by asking my students what they would like to know and advised them to control the session in terms of letting me know what material within the subject matter they wanted to focus more on to improve their understanding. These helped my students feel welcomed and answer as well as ask questions. For example, we were discussing the effects of smoke on the lungs and at one point a student asked about vaping. This stirred the conversation in a slightly different but essential conversation that was very important because the number of youth who opt to vape is increasing * I was pleased that all my “students” contributed to the conversation in some capacity. I think for me this was testament that I was able to create a welcoming and nonjudgmental atmosphere. * In terms of improvement, I think that the material could have been further simplified so that the students got an opportunity to participate more confidently. The importance of considering my audience was reinforced even though I know that in reality this course would be catered to my students and I have a very good understanding of the material that they come to clinical with. |

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