



Building a Service-Learning Mindset: Creating Online Modules for Respiratory Therapy Students

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Background

Service learning is a well-established method of learning and common in pre-professional healthcare programs. The benefits of service learning include expanding students' strengths in both academic and professional skills (Stewart & Wubbena, 2014). In recent years, opportunities for expansive student service learning within our respiratory therapy program have diminished, with barriers being availability of time, resources, and clinical partners. Online learning is a ready consideration to enhance lessons that lack a performance context, and methods tested and refined during the recent pandemic highlight students' ability to develop skills from service learning via online delivery (Ngai, et.al., 2024). A need for online service-learning opportunities arose from a clinical partner canceling scheduled service-learning rotations for USI respiratory therapy senior students shortly before the beginning of the Fall 2024 semester.

Procedural Consideration

- ❖ Service-learning topics needed to remain in the course to meet stated objectives
- ❖ Module format was informed by Goertzen, et. al's (2019) Preparation Phase for service learning:
 1. Examine problem and community impact
 2. Identify individuals affected
 3. Consider own skills that could affect change
- ❖ Modules were uniform in topic, sequence, delivery, and activity.
- ❖ Students completed modules on campus in quiet area with access to faculty.
- ❖ Students participated in debrief with faculty immediately after completing module.

References

1. Goertzen, B.J., Kastle, S.D., Klaus, K., & Greenleaf, J. (2019). Discovering the leader within: Learning leadership through service (2nd ed.). <https://www.fhsu.edu/leadership/student-resources/discoveringtheleader>
2. Ngai, G., Lau, K.-H., & Kwan, K.-P. (2024). A large-scale study of students' e-service-learning experiences and outcomes during the pandemic. *Journal of Experiential Education*, 47(1), 29–52. <https://doi.org/10.1177/10538259231171852>
3. Stewart, T., & Wubbena, Z. (2014). An overview of infusing service-learning in medical education. *International Journal of Medical Education*, 5, 147–156. <https://doi.org/10.5116/ijme.53ae.e907>

Module Structure

The structure of the module was consistent in sequence and style of delivery regardless of topic.

1. Statement of Topic and Objectives
2. Defining the Issue and Consequences (Delivery: Videos)
3. Scholarly Evidence (Delivery: Guided Academic Journal Article Readings)
4. Interactive Discovery of Affected Populations (Delivery: Interactive Maps with Data)
5. Examining Ways to Affect Change (Delivery: Videos)
6. Synthesis: Journal Activity with Clinical Scenario and Care Plan Creation

Discussion

The modules contained carefully curated resources and directed activities intended to develop students' understanding of issues within selected medically underserved communities. In following the guidance for preparing students for service learning from Goertzen, et. al (2019), the modules led students in specific tasks to enhance that preparation.

To examine the community problems and impact, students watched short introductory videos and completed guided reading from peer-reviewed journals. Videos were chosen for inclusion based on content, focus, and length (approximately 5 minutes). Journal articles built on the introductory videos and widened the scope of the problem while also providing additional foundational information on the community. Guided reading points also built students' skills in reading and comprehending scholarly literature.

After becoming more familiar with the community and problem, students discovered additional details about affected individuals through interactive maps. These resources allowed students to choose specific regions of the country and note population information that added to their knowledge of the issue. Specific attention was placed on areas near to USI, and students were encouraged to investigate populations near to each's hometown if outside of the Evansville regional area. This information provided students with a clearer understanding of demographics of affected people.

Next, students considered skills and strategies to promote change by watching interviews and features of those already working in the underserved community. This area also included additional media that highlighted avenues of support and provided profession-specific tasks that fit opportunities for change.

To conclude the module, students were given the clinical scenario of a fictional patient in the focus population and created a professional action plan to assist the individual. A face-to-face debrief with a faculty member reinforced the learning and provided broad feedback on the module.

Module Image

Food Insecurity and Underserved Communities

In this module, you'll be exploring how underserved medical communities are affected by undernourishment and the impact this condition has on cardiopulmonary health. While it is difficult to investigate every aspect of this socioeconomic and medical complication in the time we have, an instructor provides avenues of thought, consideration, and possibly inspiration to help patients in this demographic. Today's objective are:

- Define food insecurity and its consequences
- Discover primary causes of food insecurity in medically underserved communities
- Identify local, state, and national populations of medical underserved communities at risk of food insecurity
- Examine medically underserved communities in the USI clinical area
- Learn strategies for improving major contributors to food insecurity
- Identify the role of respiratory therapists in combating consequences of food insecurity in patients with cardiopulmonary disease in medically underserved communities
- Create an education plan to assist food insecurity concerns with a cardiopulmonary patient in a medically underserved community

Activity 2: Defining Food Insecurity and Consequences

1. Watch this video that defines food insecurity

Activity 3: Scholarly Sources

The following scholarly article discusses malnutrition (a consequence of food insecurity) and lung development and long-term health:

[Malnutrition and Lung Development.pdf](#)

As you read, consider the following:

1. The authors discuss in the introduction how nutrition influences lung growth and function. What is the start of this status?
2. Can patients of any age be obese and still undernourished? What are the consequences of undernourishment?
3. When does lung development begin?
4. The authors discuss intrauterine growth restriction and specify the results of prolonged fetal undernutrition on lung growth—what are they?
5. Once the patient is old enough to eat independently, food insecurity could mean risk of undernutrition again. What effects do childhood malnutrition have on lung health?
6. Finally, as adults, there are additional risks to lung health, like lifestyle, environment and smoking, that affect lung function. How can this be further complicated by malnutrition?

Activity 4: Interactive Discovery

So now you've learned more definitions and consequences of food insecurity, and you've even learned some specifics in relation to health outcomes. How common is food insecurity in our area?

Follow this link to look at Feeding America's interactive map: <https://map.feedingamerica.org/country/002?overall@indiana>

In taking a look at the map of Indiana, please keep in mind the meaning of the acronym "SNAP". The SNAP program provides food money and credits to those individuals and families whose income falls below defined levels to be able to afford food comfortably. SNAP thresholds are these income limits and are often the best indicator of food-insecure underserved people and communities. Being below the threshold means qualifying for food benefits.

1. USI is in Vanderburgh County. What is the food insecurity rate? Hover over or click on the county for more info. How many people are food insecure?
2. How many neighboring Indiana counties are food insecure? If you're from a different area, take a look at your county and those surrounding.
3. Now navigate up to the drop down menu and choose Kentucky. Again, look at the counties around USI and Vanderburgh County. Close KY areas include Henderson, Davies, and Union Counties in KY.
4. Finally, choose Illinois from the drop down menu. Look at those counties around USI and Vanderburgh County. Close IL areas include Wabash, White, and Edwards Counties in IL.

Activity 5: How Can We Help?

1. This video discusses local efforts in Vermont to identify those at risk of food insecurity and get them resources and support.

Activity 6: The RT Role in Helping Patients with Food Insecurity

Read the clinical scenario, then apply what you've learned in this module to your existing clinical skills. Create a care plan from the questions in the scenario.

Limitations and Conclusion

Limitations to this project included potential duplication of content that students from previous courses outside of the respiratory therapy program and obtaining detailed feedback on the project's impact on the students. Lessons learned included the need to gauge students' interest and previous exposure to specific sub-categories prior to entering and assigning the module, creating a group debrief post-project conclusion to facilitate crosstalk and course improvement, and working for a sustainable format for disseminating project information. In conclusion, Building a Service-Learning Mindset with online modules was very successful in exposing students to service-related topics, creating an alternative format for content delivery, and promoting this structure cross disciplines.