

Implementation of Self-Directed Learning in a Preclinical Respiratory Course

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Introduction

Self-directed learning (SDL) is essential to incorporate into the medical curriculum to develop lifelong learning skills. The Liaison Committee on Medical Education (LCME) defines four specific components of SDL that must be incorporated into medical education. We created a team-based SDL activity and evaluated whether this format aligned with the SDL components defined by the LCME, using students' evaluations and reflections.

Aims and Objectives

we designed a structured, team-based SDL activity that explicitly aligns with LCME-defined components and operationalizes Knowles' framework within a preclinical medical curriculum.

Methods

Participants were first-year medical students enrolled in the preclinical Respiratory course during the winter semesters of 2021 and 2022. We analyzed students' evaluations and SDL reflections to determine student satisfaction and whether our SDL activity aligned with the SDL components defined by the LCME and other previously studied themes using content analysis.

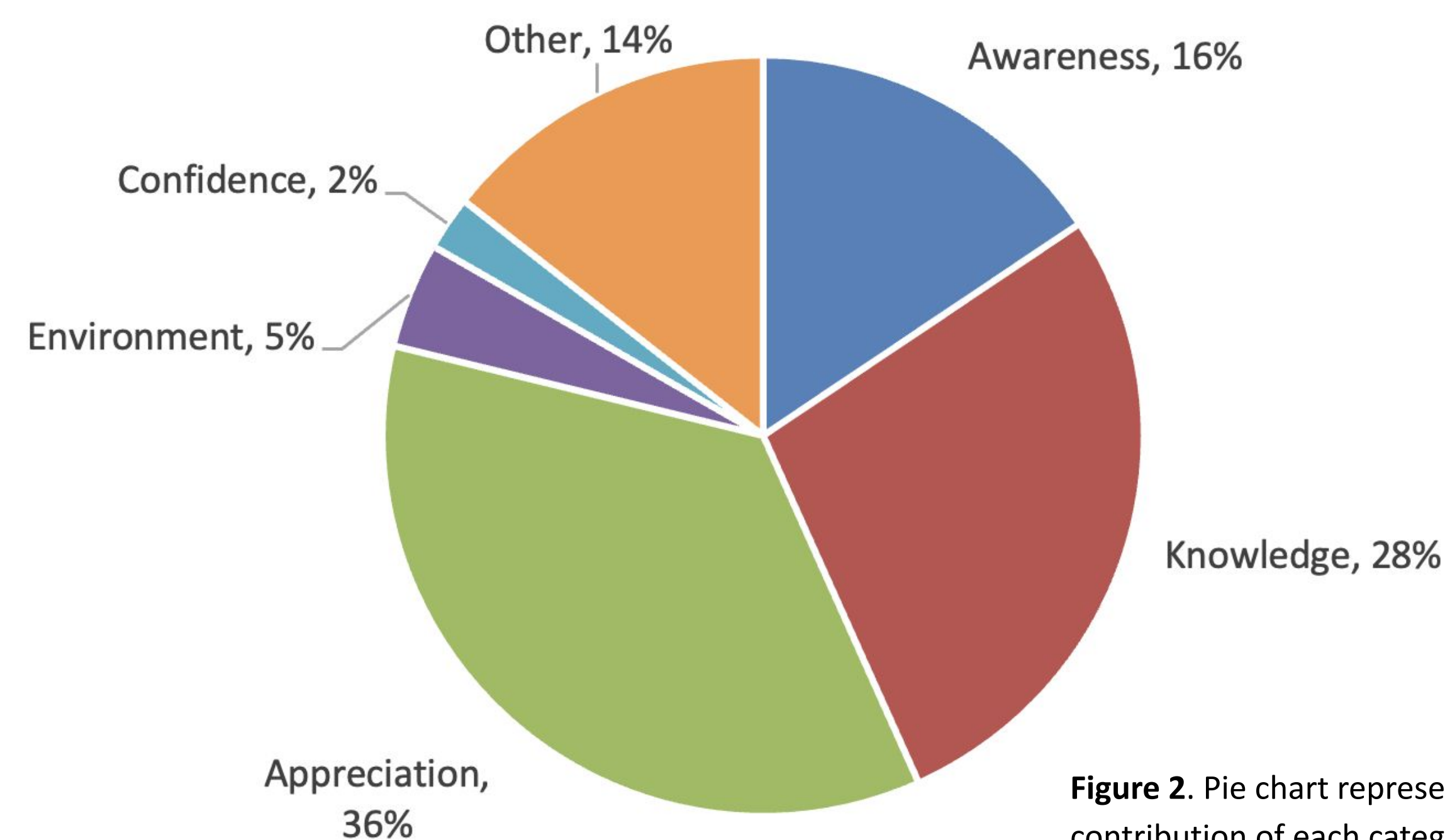


Figure 2. Pie chart representing the mean percent contribution of each category from students' SDL reflections (N=245) across 2021 and 2022.

Results

Our reconciled data shows mixed results from students when asked if SDL enhanced their learning. Using a 5-point Likert scale (1=strongly disagree and 5=strongly agree), students in the 2021 and 2022 classes (N=245) answered with a mean=3.2 (SD=1.35). All LCME components were mentioned in reflections, with "identifying, analyzing, and synthesizing information relevant to their learning needs" having the most mentions. In order of frequency, the percent contributions of mentioned themes from the content analysis of students' evaluations were appreciation (35.5%), knowledge (27.7%), awareness (15.6%), other (14.4%), environment (4.5%), and confidence (2.3%).

Discussion

We developed a team-based SDL activity in a respiratory course that aligns with the LCME's SDL components and promoted other themes such as appreciation and knowledge.

Table 1. Content Analysis of Students' Self-Directed Learning (SDL) Reflections (2021–2022) Showing the Frequency of the LCME-Defined SDL Components. This includes data from 245 students: N=123 for 2021 and N=122 for 2022.

LCME SDL Components	Q1: What have you learned during the SDL session in the Respiratory course? (# of events)	Q2: How will you continue to use SDL in your practice or future? (# of events)	Total # of events (% of contribution)
Identify, analyze, and synthesize information relevant to their learning needs	138	221	359 (51%)
Share the information with their peers and supervisors	90	64	154 (22%)
Assess the credibility of information sources	61	42	103 (15%)
Receive feedback on their information-seeking skills	51	36	87 (12%)

Conclusions

By incorporating learner-driven topic selection, structured opportunities for feedback, evaluation of information sources, and reflection, our intervention ensures that all core elements of SDL are not only present but measurable. Furthermore, our content analysis extends beyond LCME requirements by capturing additional domains—such as appreciation, awareness, knowledge, environment, and confidence—that have been previously associated with SDL but inconsistently evaluated

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