



The Use of Guided Reading Questions as a Scaffolding Technique in a Flipped Graduate Metabolism Class

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Abstract

Objective: Evaluate the use of guided reading questions (GRQ) as a scaffolding technique in a flipped classroom among graduate dietetic interns.
Use of Theory: The Staged Self-Directed Learning Model conceptualizes how students move towards self-directed learning in 4 stages. As students become more responsible for their own learning, they need different guidance or support from the teacher. In a previous study, students were resistant to flipped learning initially. It was hypothesized that if the instructor provided scaffolding techniques, such as GRQ, to help students learn on their own, the resistance to flipped learning may be minimized.
Target Audience: Graduate Dietetic Interns (n=10) enrolled in a graduate-level metabolism course during their first semester at a midsize, private Midwestern university.
Course/Curriculum Description: In this flipped class, students read textbook chapters and/or watch videos prior to coming to class, then engage in activities (i.e. case studies) to apply the information using team-based learning in class. GRQ were provided for students to use when reading the textbook for the first 5 weeks of the semester.
Evaluation Methods: Students completed 8 written learning reflections throughout the semester, which occurred approximately every other week. Content analysis was applied to these reflections to discover themes.
Results: Students viewed the GRQ as instructor support. Students reflected that they appreciated the GRQ at the beginning of the semester, but understood why they would not receive them for the entirety of the course. They reported that the GRQ helped them develop reading comprehension and note taking skills. At the end of the semester students reported that they would not need them.
Conclusions: Providing students GRQ in a flipped class, especially at the beginning of the semester, may be a useful scaffolding technique to help students gain skills in learning on their own and reading comprehension.

Background

In a flipped learning, students prepare for class by reading, completing assignments, or watching videos. During the face-to-face class sessions, students then spend time applying foundational knowledge.¹ While flipped learning appears to be beneficial,² in two previous iterations of this graduate metabolism course, students did not buy into the flipped learning process for several weeks.³ To help students adjust, scaffolding may be necessary to help students learn on their own.^{3,4} Guided reading questions can help students identify what the instructor wants them to understand from the assigned readings.

Objective

Evaluate the use of guided reading questions as a scaffolding technique in a flipped classroom among graduate dietetic interns.

Methods

The study was approved by the Bradley University Committee on the Use of Human Subjects in Research.

Setting:

- Graduate level metabolism course in a Dietetic Internship-Master of Science Program (n=10)
- Flipped course with team-based learning
- Students were given the option of completing guided reading questions to help them with the textbook readings that were phased out during the semester.

Data Collection

- Each student completed 8 structured learning reflections as part of the normal class using the Learning Management System Blog Tool
- Consent obtained after semester concluded.

Data Analysis

- Content analysis by time-point applied to reflections by 2 independent investigators
- Reflections were compared to previous cohorts of this class without guided reading questions.³

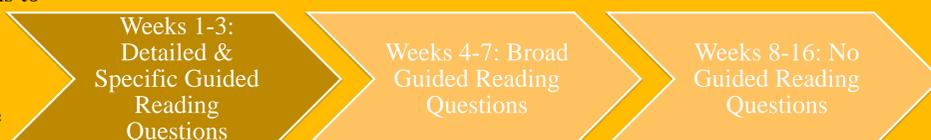


Figure. Timeline and Process of Phasing out Guided Reading Questions

Findings

Themes discovered from learning reflections were similar to the themes reported from previous cohorts³ that did not have guided reading questions with some exceptions.

Theme	Description of Theme	Differences in Themes with Guided Reading Questions
Responsibility for Learning	<ul style="list-style-type: none"> • At the beginning of the semester, students were confident to learn on their own, but wanted some instructor guidance. • Did not need to read textbook to be successful in previous courses. • Although learning independently was challenging, they had a desire to continue learning. 	<ul style="list-style-type: none"> • No noticeable dip in confidence at week 4 • No buy-in moment; seemed to trust the flipped process from the beginning.
Metacognition	<ul style="list-style-type: none"> • Flipped learning is time consuming, but acknowledged this was part of the learning process. • Understand how they learn best, with a focus on repetition. • Discussion, asking questions, and hearing multiple points of view improve learning. 	<ul style="list-style-type: none"> • Did not focus on frustration with time-consuming class preparation. • Discussed what adjustments they need to make to be successful in class.
Team-Based Learning	<ul style="list-style-type: none"> • Learning teams provide social support, provide feedback on each other's understanding, and allowed them to ask each other questions. • Still personally responsible for their own success; must prepare to help team succeed. 	<ul style="list-style-type: none"> • No anxiety about team members coming to class prepared. • Acknowledged their own limitations and stepping back to let others contribute or take charge.
Transfer of Skills	<ul style="list-style-type: none"> • Understood how class format applied to future career (i.e. finding answers on their own).. • Improved other life skills (i.e. time management). 	
Two new themes were discovered with the introduction of guided reading questions.		
Trust and Comfort	<ul style="list-style-type: none"> • Comfortable asking questions, not knowing the answers, and making mistakes. • Not afraid or intimidated by the flipped learning process. 	
Guided Reading Questions	<ul style="list-style-type: none"> • Viewed as instructor support. • Helped them develop reading comprehension and note taking skills. • Were nervous about questions phasing out initially, but understood why, and did not need the questions by the end of the semester. 	

Discussion & Conclusions

Even though flipped learning is beneficial¹, students may need time to adjust and buy into the process.³ By utilizing scaffolding techniques, instructors may be able to provide the guidance students initially need from the instructor,⁴ and in the present study, guided reading questions seemed to be a useful scaffolding technique. Compared to previous cohorts of this class that did not have guided reading questions, students maintained initial confidence, did not express frustration, trusted the flipped process from the beginning of the semester, did not have anxiety about team members coming to class prepared, and acknowledged their own limitations and areas for improvement. These scaffolding techniques may be especially important if students have not had a flipped class before as they may struggle with reading comprehension, note-taking skills, and independent learning.³

References

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