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Pilot Comparison of Reading Quiz Formats in a Graduate Speech Sound Disorders Course

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Abstract

The purpose of this study was to explore student performance, self-ratings of learning and preference, and student comments on a variety of reading quiz formats in a first semester speech-language pathology graduate course. Students from two cohorts (n = 34) completed four types of quizzes: closed-book, open-book, open-note, and collaborative group in addition to a note review study option in self-selected order. Scores and reported preference were significantly lower on closed-book quizzes compared to other formats, but few other significant differences were observed across formats. Ranges of preferences, low variability in scores, and student comments supported the practice of allowing students to choose their own format, consistent with a needed move in the field towards learner-centered teaching. While additional research is warranted, this pilot study suggests that adding the learner-centered element of choice to assessments such as quizzes can provide flexibility for student preferences while also increasing adherence to reading assignments.

Keywords

learner-centered teaching, reading quiz, student choice

Cover Page Footnote

Many thanks to my students for their excitement to learn, my colleagues who inspire me to grow as an instructor, and my writing group teammates for their motivation and encouragement.

Students completing a graduate program in speech-language pathology (SLP) need to not only acquire knowledge of the basic human communication and swallowing processes including typical and atypical development, but also have "demonstrated knowledge of communication and swallowing disorders and differences, including the appropriate etiologies, characteristics, and anatomical/physiological, acoustic, psychological, developmental, and linguistic and cultural correlates" across nine areas of practice (Standard IV-C; Council for Clinical Certification in Audiology and Speech-Language Pathology [CFCC] of the American Speech-Language-Hearing Association [ASHA], 2020, para. 37). Thus, a challenge for SLP faculty is to ensure students are gaining an adequate breadth of knowledge in a relatively short graduate program of typically two years. Given the goal of proceeding quickly up Bloom's taxonomy (Krathwohl, 2002; Vinney et al., 2019) to have students apply, analyze, synthesize, and evaluate information, there is a pressing need to efficiently measure students' ability to remember and understand core foundational knowledge. Reading quizzes are one method that allows instructors to gauge student knowledge on basic or review material without dedicating class time or lectures to this foundational content.

Readings as a Learning Tool

Kullmar and Blankenship (2020) investigated undergraduate communication sciences and disorders (CSD) student reading behaviors as part of a study that explored the utility of vocabulary lists compared to textbook readings for learning anatomy and physiology terms. Of the 44 participants in their study, about 33% of the students reported that they consistently followed the course reading schedule while 52% of participants reported that they completed the assigned readings about half the time. The remaining survey participants (i.e., eight percent of respondents) selected one of the remaining options: (a) reading the text but not as scheduled or (b) only looking at the text if needed to complete an assignment (Kullmar & Blankenship, 2020). The authors discussed the need to incentivize reading to ensure students completed reading tasks as assigned, through means such as journal summaries or quizzes.

Similarly, Clump and Doll (2007) reported that approximately 54% of psychology graduate students completed the readings before class; however, this percentage increased to approximately 84% when the material in the readings were going to be assessed during class. Culver and Hutchens (2021) surveyed college students and faculty to examine their perceptions of course readings. Of the college students, 63% agreed or strongly agreed that they completed their readings routinely, and 92% reported that they felt they could pass the course with at least a C grade without doing any of the readings. Some of the students surveyed indicated that the professor should cover all information that would be covered on the exam or was important to know in class, thus suggesting that course readings should not be assigned. Faculty affirmed the importance of course textbooks., However, consistent with student opinions, 89% of faculty reported that a C grade was achievable without using the course textbook at all. Consistent with other studies (Clump & Doll, 2007; Pape-Lindstrom et al., 2018), the authors recommended the use of reading quizzes to improve compliance with reading assignments as well as check comprehension (Culver & Hutchens, 2021). In addition to increasing the amount of reading students complete, incorporating reading quizzes can also lead to higher exam scores (Pape-Lindstrom et al., 2018).

Cook and Babon (2017) surveyed students across three years following a course in which students took weekly online reading quizzes prior to class. Of the students who made comments on their

survey, 32.5% commented positively that the quizzes increased the likelihood of completing assigned readings, and some students also mentioned that they appreciated how the reading quizzes increased the reading compliance of their peers, thus allowing for more in-depth discussion of the material than would happen if some students did not keep up with the reading.

Motivation has frequently been hypothesized as a key factor in student compliance with assigned readings, but there are other factors that may also contribute to students not reading the assigned course text. Ryan (2006) suggested that even at the university level, students may not have the skills needed to critically read and comprehend textbooks; they demonstrated, however, positive effects of scaffolded reading assignments. High order reading comprehension skills are critical in higher education – especially at the level of graduate studies where course textbooks contain advanced vocabulary and complex analyses – but students rarely received instruction on how to improve their reading skills (Doolittle et al., 2006). It cannot be assumed that upper-level students have stronger reading comprehension skills as their progress through higher education may have been driven by their capacity to perform well despite not doing readings. Finally, as noted in many courses, completing assigned readings is not correlated to achieving higher grades (Brost & Bradley, 2006).

Alongside motivation and ability, not having enough time to complete readings has been cited as a challenge reported by students (Brost & Bradley, 2006). These time constraints can certainly be a factor for SLP students enrolled in multiple courses and clinical experiences, who have reported time management as an extreme stressor during graduate school (Lieberman et al., 2018). The physiological experience of stress impacts both memory formation and recall, such that student stress can negatively impact the storage of details while reading and the retrieval of learned information while taking quizzes (Vogel & Schwabe, 2016).

Studies of Reading Quiz Performance

Completion – or non-completion – of assigned readings certainly impacts how well students will score on a reading quiz, but reading quiz performance can also be influenced by students' comprehension of what they have read (Doolittle et al., 2006). Another potential variable that could impact student performance on quizzes is the format in which the quiz was presented. While most studies which compared closed-book to open-book quizzes found either a null effect or advantage for open-book (Sencova et al., 2018), Rummer and colleagues (2019) noted an advantage of closed-book practice tests when students were presented with an unexpected closed-book retrieval test.

In addition to factors of quiz performance and later retrieval, student anxiety has been found to be a factor to consider when selecting quiz or exam format. In a study of three formats of 50-question exams (i.e., open-book, closed-book, and cheat sheet), introductory psychology and statistics students were asked to rate their format preference and anxiety level (Gharib, et al., 2012). Researchers also measured exam score and later retention of material via a brief quiz. No differences in retention quiz scores were observed, but the use of open-book and cheat sheet formats resulted in modestly higher exam scores immediately. Most importantly, scores amongst the exam types were positively correlated such that students who performed well on exams did so regardless of format. Students rated their anxiety to be lowest during open-book exams. These

results taken together suggested an advantage for open-book or cheat sheet formats given the lack of differences in retention yet lowered student anxiety.

Moving Towards Learner-Centered Teaching

In an analysis of the signature pedagogy of the SLP field, Brackenbury and colleagues (2014) outlined a focus on theory before practice, delivered primarily through traditional means such as lectures followed by exams. The authors proposed several changes to this pedagogy including increased use of learner-centered teaching, integration of evidence from scholarship of teaching and learning, and focused efforts on reflective practices including explicitly addressing the clinical critical thinking process. Learner-centered teaching, also referred to as student-centered learning, is an approach to flipping the focus of teaching from the content deemed important by instructors delivered in a traditional format to a method of learning driven by the students (Brackenbury et al., 2014; Weimer, 2013; Wright, 2011).

Weimer (2012) proposed five characteristics of learner-centered teaching as a framework for tightening the operational definition of the concept. The first characteristic was that learner-centered teaching engaged students in active roles of practicing learning rather than being passively guided by the instructor. Secondly, skills – including how to think about and solve problems – were explicitly targeted and taught. The third characteristic proposed that not only the learner but also learning be centered, and instructors should discuss what they have learned and how with students. The fourth characteristic was to give students control over their learning as a motivational tool, and the final characteristic was that collaborative learning should be encouraged.

One of the ways reading quizzes can contribute to a learner-centered teaching model is by centering the learning process such that formative follow-up activities are designed based on the results of the reading quizzes to expand knowledge in areas students did not gather from the reading (Hodges et al., 2015). In this sense, while reading quizzes themselves are not centering the learner, the inclusion of reading quizzes to assess what information students did or did not gain from the readings can allow teaching to center in on gaps in knowledge or understanding. Giving students choices in quiz format and asking them to reflect on their learning are additional means of shifting the practice of administering reading quizzes to a learner-centered model.

The purpose of this study was to explore student performance on a variety of reading quiz types as well as ratings of preference and learning in a graduate speech sound disorders course. The specific research questions included:

1. Which reading quiz types had the greatest student ratings of preference and learning?
2. Were there significant differences between formats in terms of score achieved?
3. What was the relationship between student reported learning and preference compared to performance on the reading quiz?

It was hypothesized that students would prefer open-book over other quiz types and that there would be a correlation between learning, preference, and performance on the quizzes.

Methods

Participants. A total of 38 students participated in the study. Students were in two cohort sections of an Advanced Speech Sound Disorders course (SPA 660) at a Southwestern institute of higher education. Cohort 1 (n = 16) was a full-time (FT) cohort which consisted of students who had completed undergraduate degrees or the post-baccalaureate pre-requisites communication sciences and disorders. Cohort 2 (n = 22) consisted of students who had earned an undergraduate degree in communication sciences and disorders and worked full-time in a school district while attending graduate school part-time (PT). Both cohorts were in the first semester of their graduate program at the time of the study. Data was not included for four students (one FT; three PT) who had missing data due to absences. Demographic data was not collected from the students participating, but college wide data is available on the characteristics of the graduate SLP students enrolled (Tableau Public, 2023) and is presented in Table 1.

Table 1

Demographic Characteristics of SLP Graduate Students Enrolled During the 2022-2023 Academic Year

Characteristic	*n*	%
Gender		
Female	37	97.3
Other or Unreported[a]	1	2.6
Generation		
First-Generation	20	52.6
Continuing-Generation	15	39.5
Unreported	3	7.9
Race/ethnicity		
White	18	47.3
Hispanic (of any race)	11	28.9
Other or Unreported[a]	9	23.7
Age		
20-24	6	15.8
25-34	13	34.2
35+	19	50.0
Income		
Pell Grant Dispersed	13	34.2
No Pell Grant Dispersed	19	50.0
Unknown (No Aid Application)	6	15.8

Note. n = 38.

[a]Per the enrollment database (Tableau Public, 2023) characteristics are only presented for groups of at least five. If fewer than five students report a characteristic (e.g., Black/African American) those results are not provided to protect student privacy.

Procedures. Students completed an in-person reading quiz assignment each week, across five weeks during the fall 2022 semester. All quizzes were multiple choice with 10 questions, completed on paper, and untimed. Quiz questions were developed from chapters two through six

of McLeod and Baker's (2017) textbook. Formats of quizzes included: (a) closed-book, (b) open-book, (c) open-note, and (d) collaborative open-note along with an additional option of note review without taking a quiz. Students selected the order in which to complete the formats from week to week, and each format was completed only once. For example, on the first week of quizzes all students took a quiz on chapter two, but some students took the quiz open-book while others chose closed-book. For collaborative quizzes, students chose their own groups of two to six students per group. Students recorded their score out of 10 following completion of the quiz and rated each format (including note review with no quiz) on two, five-point Likert scales: "How much I learned" and "How much I liked it." For these scales, a score of one represented "very little" and score of five represented "very much." Students were also invited to write optional comments regarding each format. Students were graded on completion of the assignment and their top three quiz scores.

Following the end of the semester, IRB approval was granted to use de-identified assignment data for the current investigation. De-identified Likert ratings, comments, and quiz scores were entered and analyzed via Microsoft Excel. Friedman tests and nonparametric Spearman's rank correlation coefficients were used to statistically compare ratings via IBM Statistics (Version 27). Friedman tests are a nonparametric alternative to calculating repeated analysis of variance. Post-hoc pairwise comparisons were carried out using Wilcoxon signed-rank tests with Bonferroni corrections applied. For significant results, effect sizes were calculated using Cohen's *d* via an online effect size calculator (Social Science Statistics, 2018) and compared to the ratings of small = 0.2, medium = 0.4, large = 0.8, and very large = >1.0.

Qualitative data was explored using a six-step thematic analysis (Braun & Clarke, 2006). Student responses were organized into a spreadsheet and all responses related to each quiz format were read and re-read several times to generate familiarity. Initial codes were developed, and responses categorized. Following a review of themes in which it was determined that all responses would fit into the coded categories, themes were defined and named as "positive," "mixed," and "negative" reactions to the quiz type. Finally, exemplars were extracted that provided vivid representation of the themes (Braun & Clarke, 2006).

Results

Preliminary Descriptive Statistics. Descriptive statistics regarding student Likert ratings for degree of learning and liking are presented in Table 2. Friedman tests were run to determine whether differences between conditions were statistically significant. There was statistically significant variance across student scores by quiz type χ^2 (3) = 18.25, $p < .001$, reported liking of the different formats, χ^2 (4) = 29.47, $p < .001$, as well as significant variance with regards to how much students reported learning from each type of quiz, χ^2 (4) = 23.15, $p < .001$. While the data from the two cohorts was analyzed together, a *t* test of overall mean quiz scores revealed no significant difference between FT ($M = 8.03$, $SD = .55$) and PT ($M = 8.13$, $SD = .53$) cohorts, $t(32) = 0.54$, $p = .590$.

Table 2

Quiz Likert Ratings and Score Out of 10

Quiz Type	Mean rating of perceived learning (*SD*)	Mean rating of student preference (*SD*)	Mean quiz score (*SD*)
Closed-book	3.71 (1.22)	2.85 (1.40)	7.00 (1.79)
Open-book	4.18 (0.81)	4.56 (0.61)	8.82 (1.19)
Open-note	4.24 (0.96)	4.24 (0.89)	8.12 (1.37)
Collaborative	4.24 (0.92)	4.15 (1.16)	8.42 (1.25)
Note review	3.30 (1.24)	4.25 (1.24)	N/A

Note. $n = 34$.

Research Question 1: Which Reading Quiz Types Had the Greatest Student Ratings of Preference and Learning? Comparing how much students liked different formats compared to closed-book quizzes, there was a clear preference away from closed-book, with all Wilcoxon signed-rank tests significant ($z = -3.48$, $p < .001$ to $z = -4.30$, $p = .001$) and very large effect sizes (Cohen's $d = 1.0$ to 1.6). This pattern did not persist when it came to students' rating of how much they learned across each format. Differences between reported learning were not significant for any of the Wilcoxon signed-rank tests (with Bonferroni correction $0.05/4 = 0.013$) comparing closed-book to open-book, $z = -1.84$, $p = .065$, open-note, $z = -1.95$, $p = .052$, collaborative quizzes, $z = -2.11$, $p = .035$, or not having a quiz, $z = -.90$, $p = .369$. Student feedback corroborated these patterns with comments on the closed-book format related to stress, questioning oneself, and lack of notetaking, as illustrated in Table 3.

Table 3

Student Comments on Closed-Book Quizzes

Theme	Percent of responses	Example quote(s)
Positive	14.8%	"I thought I wouldn't recognize a lot of the content, but I knew more than I thought I did."
Mixed	29.7%	"I felt like I learned more because I had no book/notes, but it [did] me feel a little nervous."
Negative	55.5%	"I felt stressed leading up to the quiz, but I felt pressured to synthesize the most important info. I second guessed myself a lot."
		"I thought I had retained a little more than I did. If I had taken more notes, I would have remembered more."

Note. $n = 27$

Open-book quizzes were frequently rated as likable formats. 62% of students ($n = 21$) gave them the maximum rating of five and no students rated it less than a three. However, this difference was only significant when compared to closed-book quizzes, $z = -4.30$, $p < .001$, $d = 1.6$, but not compared to open-note, $z = -1.57$, $p = .116$, collaborative quizzes, $z = -1.84$, $p = .067$, or note review, $z = -0.91$, $p = .361$. Reported learning was significantly higher than note review, $z = -3.10$,

but not compared to closed-book, $z = -1.84$, $p = .065$, open-note, $z = -0.61$, $p = .540$, or collaborative quizzes, $z = -0.34$, $p = .735$. Responses from students regarding the open-book quizzes are summarized in Table 4.

Table 4

Student Comments on Open-Book quizzes

Theme	Percent of responses	Example quote(s)
Positive	54.8%	"The book just reassured me. I could have done this [without] the book!"
		"This was the easiest because I had read the chapter and knew where to look to verify."
Mixed	19.4%	"Easier to reference information but less need to store in long-term memory."
		"I didn't learn as much but I felt a lot more secure and confident going into the quiz."
Negative	25.8%	"It was harder looking through all the pages."

Note. $n = 31$

Students rated open-note quizzes evenly in terms of how much they reported learning ($M = 4.24$) and liking ($M = 4.24$) this style of quiz. The pattern of significance was identical to open-book quizzes, with only significant differences observed for liking compared to closed-book quizzes, $z = -3.48$, $p = .001$, $d = 1.2$, and learning only compared to not having a quiz, $z = -3.23$, $p = .001$, $d = 0.8$. Many students corroborated how much they liked and learned from this format with comments while negative comments regarding the open-note quiz centered around the lack of effective notes (See Table 5).

Table 5

Student Comments on Open-Note Quizzes

Theme	Percent of responses	Example quote(s)
Positive	41.4%	"I liked having my notes to check my knowledge. I do feel I learned more by taking detailed notes."
		"I enjoyed this. I was able to recall where questions were based off chapter notes."
Mixed	20.7%	" I need to allow myself more time to take better detailed notes. Overall note taking helped [with] recall."
Negative	37.9%	"My notes were not that detailed/reliable."
		"I was focused on making sure I had every detail in my notes. When it wasn't in there it made me feel stressed."
		"Wrote in examples from textbook, which led me to the wrong conclusion on quiz."

Note. $n = 29$

Compared to open-book and open-note quizzes, there was descriptively a wider variation in preference for collaborative quizzes. Almost as many students rated their liking as a five (n = 20) as for open-book (n = 21). While there was not a significant difference between ratings of likability for this quiz type compared to open-book, z = -1.84, p = .067, open-note, z = -0.58, p = .561, or note review, z = -0.56, p = .573, there was notably a quarter of students (n = 9) who rated collaborative quizzes as a 3/5 or lower. Positive, mixed, and negative comments for collaborative quizzes are summarized in Table 6. Students who gave a low rating for how much they liked collaborative quizzes tended to rate their learning higher than their preference and commented on their reasons for not preferring taking quizzes in a group:

Table 6

Student Comments on Collaborative Quizzes

Theme	Percent of responses	Example quote(s)
Positive	67.8%	"I felt responsible to be better prepared for the group quiz. It helped talking through the questions."
		"I really like a group quiz more than I expected because we could debate and analyze information."
		"I realized that I do know as much as my classmates."
Mixed	14.3%	"I learned a lot from my peers. I chose answers I wasn't content with due to peer pressure."
Negative	17.9%	"When one person was confident in an answer, the other person would give in but these answers were wrong."
		"Too many overthinking brains."
		"I like relying on myself and I found that I selected one I knew [was wrong] to go with [the] group."

Note. n = 28

When students were allowed to review their notes without taking a quiz, student ratings were aligned with the patterns seen across other quiz types, with likability only higher compared to closed-book quizzes, z = -3.78, p < .001 and learning significantly lower than for open-book, z = -3.10, p =.002, d = 0.8, open-note, z = -3.23, p = .001, d = 0.8, and collaborative quizzes, z = -3.63, p < .001, d = 0.9. In terms of student comments, presented in Table 7, the positive responses were enthusiastic and spoke to a decrease in stress. Mixed responses also highlighted decreased stress but suggested that with that decrease in stress also came a decline in learning.
Other students did not report a benefit from having time to review notes.

Research Question 2: Were There Significant Differences Between Formats in Terms of Score Achieved? In terms of quiz scores, students performed the lowest on closed-book quizzes with a mean score of seven out of 10 (SD = 1.79). Based on Wilcoxon signed-rank tests with a Bonferroni correction to 0.05/3 = 0.017, performance on this traditional closed-book quiz type significantly differed from open-book quizzes, z = -3.77, p < .001, d = 1.2, open-note quizzes z = -2.41, p = .016, d = 0.7, and collaborative quizzes, z = -2.85, p = .004, d = 0.9. Despite these

differences being significant and having a large effect size, the highest mean score (open-book) only differed from closed-book quizzes by 1.82 points.

Table 7

Student Comments on Note Review Condition

Theme	Percent of responses	Example quote(s)
Positive	50%	"Great catch up!" "It was nice to just look over my notes without the pressure of a quiz." "Loved it. I got to feel a little more relaxed this week."
Mixed	38.5%	"No stress. Felt less pressure. Did not study as much/retain as much." "This was less stressful, but I did not push myself to take good notes."
Negative	11.5%	"I had a hard time keeping up [with] reading [because] of [an exam in another course]. A review of notes didn't really help me." "I felt that because there was less pressure to synthesize info, I didn't get as much out of note review."

Note. $n = 26$

Research Question 3: What was the Relationship Between Student Reported Learning and Preference Compared to Performance on the Reading Quiz? Non-parametric Spearman's rank-order correlation coefficients were used to examine the relationship between performance on quizzes to how students rated their degree of learning and liking from each quiz type. There were significant positive correlations between scores on the closed-book quiz and how much students rated learning, $r_s = 0.48$, $p = .004$, and how they rated liking this quiz type, $r_s = 0.48$, $p = .004$. No significant correlations were noted between quiz scores and learning, $r_s = -0.07$, $p = .684$ or quiz scores and liking, $r_s = 0.19$, $p = .285$ for open-book quizzes. Both relationships between quiz scores and learning and quiz scores and liking were significant for open-note quizzes ($r_s = 0.40$, $p = .020$; $r_s = 0.58$, $p < .001$). For collaborative group quizzes, the correlation between quiz scores and learning was nonsignificant ($r_s = 0.27$, $p = .123$); however, there were significant positive correlations between quiz scores and liking, $r_s = 0.45$, $p = .008$. The significant correlations found all fall within the classification of moderate correlations (0.4 to 0.6; Akoglu, 2018).

Discussion

Across five formats of reading quizzes – closed-book/note, open-book, open-note, collaborative, and note review – students expressed a range of preferences and perceived learning. The most notable difference was between closed-book quizzes and other quiz types. Student ratings indicated that while they learned from studying for a closed-book quiz, it was the least preferred style of quiz. Scores on closed-book quizzes were also significantly lower than for other types but given that all quizzes were only out of 10 points, the difference between mean scores was less than two points. Students did not report a strong preference for note review without a quiz, which suggests that in addition to incentivizing completing the reading, students did like having some type of quiz to check in on their knowledge. This finding was consistent with previous research which found that students were more likely to complete course readings when they were quizzed

on the material (Clump & Doll, 2007), indicating that quizzes provided an extrinsic motivator for students. Motivation in graduate students has shown to positively influence active learning, such that motivated students reported more enthusiasm towards learning (Changet al., 2022).

The results of this pilot study support the notion of learner-centered teaching, in that providing student choices empowered students to be responsible for their learning and select formats that work for them (Weimer, 2013). The finding of limited variability in scores between formats helped dispel concerns that allowing students to have open books or notes would reduce learning and was consistent with previous studies comparing quiz types (Gharib, et al., 2012). More research is needed demonstrating the direct impacts of learner-centered teaching at the graduate level. Studies at lower education levels indicated promising results for these strategies. For example, a study found that pronounced performance gaps on standardized testing between underrepresented minority (i.e., African American, Hispanic, and Native American) elementary school students compared to non-underrepresented minority (i.e., European American and Asian American) students in the traditional teaching condition were eliminated in learner-centered teaching schools (Salinas & Garr, 2009).

Strengths. While this study utilized traditional reading quizzes consistent with techniques Brackenbury and colleagues (2014) refer to as the signature pedagogy of the field (i.e., targeting recall of foundational information), the integration of student choice and analysis of preferences and learning, is a step in the direction of learner-centered teaching. Strengths of the study were the inclusion of diverse learners comprised of many students who are not traditionally represented in the field of SLP and the collection and analysis of both quantitative data as well as student comments. Rather than just comparing quiz scores, students were asked to rate and reflect upon how the different quiz types impacted their personal learning.

In the academic year 2021-2022, 26.5% of students in their first year of a master's program in SLP identified as members of a racial/ethnic minority (Council of Academic Programs in Communication Sciences and Disorders & American Speech-Language Hearing Association, 2023). In comparison, fewer than half of the graduate students enrolled at our university identified as White, and nearly a third as Hispanic. Given the non-traditional sample, with many of the students returning to graduate studies after years of being out of school, there was variability in students' comfort level with identifying important information in the text and taking quizzes in general. Demographic data was not linked directly to participants which prohibited post-hoc analyses across variables such as ethnicity or socioeconomic status; however, the inclusion of a diverse sample is notable and promising for the future of the field.

Considerations for Future Research. Future research should further investigate the impacts of pedagogical techniques on diverse samples of SLP students. Information related to undergraduate grade point average or standardized test scores was not available for the participants, future studies could investigate the relationships between these measures and reading quiz performance and preference. These investigations could contribute to the literature suggesting limitations in reading comprehension as a factor keeping students from engaging with course readings (Doolittle et al., 2006; Ryan, 2006).

Despite the choice of formats and limited weight to individual scores on the quizzes, many of the students anecdotally expressed anxiety about taking the quizzes and voiced stress about how the scores would impact their grades. Stress is an important factor to consider in graduate students, particularly in the field of communication sciences and disorders (Beck et al., 2020; Beck et al., 2021; Lieberman et al., 2018). Stress can impact performance on assignments due to interference with memory recall and can also interfere with the integration of new learning and existing knowledge (Vogel & Schwabe, 2016). Allowing students to choose a less stressful quiz format may limit the negative consequences of stress on learning.

One method that has been considered to reduce student anxiety related to school performance and grades is to move to a pass/fail grading scheme. However, in a study comparing numeric to pass/fail grading in a graduate speech-language pathology course, only three out of 12 students reported that having pass/fail grading led to decreased anxiety (Walden, 2022). Students in both the traditionally graded and pass/fail sections reported similar sources of stress, namely from the number of assignments which was perceived to be high – suggesting that removing the grading element alone may not be enough to reduce student stress. Specifications grading has been proposed as means of linking learning to outcomes and competencies for SLP students (Leslie & Lundblom, 2020), suggesting multiple potential benefits of this alternative format. Future investigations of reading quizzes could explore whether adding an alternative grading element (e.g., pass/fail, allowing students to retake quizzes, dropping the lowest quiz grade) to the choice of format would impact student stress or learning. Additional research should also explore the retention of knowledge checked by quizzes and whether students apply that foundational knowledge to formative projects such as case studies.

Conclusion. The study was designed as a pilot study with limited scope as a step towards a learner-centered approach to teaching graduate level speech-sound disorders. Learner-centered teaching incorporates a variety of tools of assessment to promote learning above a focus on generating numeric grades (Wright, 2011). Given the results of this initial exploration of reading quizzes, future semesters could maintain and expand upon the level of student choice of format, such that students could pick from any of the formats from week to week rather than trying all formats. Allowing student choice of reading quiz format alongside formative class activities allows for a move towards elements of learner-centered teaching without abandonment of traditional teaching techniques.

Disclosures

The author has no relevant financial and nonfinancial relationships to disclose.

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