

Interteaching: A New Approach to Peer-Based Instruction

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For several decades, instructors have used peer-based teaching methods as alternatives to traditional methods of classroom instruction. Although the majority of instructors still use lecture-based methods, peer-based methods such as jigsaw classrooms, reciprocal peer tutoring, and study teams tend to produce better outcomes (e.g., McKeachie, 2002).

Interteaching, a new method of classroom instruction, attempts to capitalize on the benefits of peer-based instruction. It does so by including as one of its primary components “a mutually probing, mutually informing conversation between two people” (Boyce & Hinline, 2002, p. 220). In the present paper, we will describe interteaching and explain how to implement it in the classroom. We will also discuss the results of several studies, which suggest that interteaching is an effective alternative to traditional teaching methods. Finally, we will discuss how interteaching capitalizes on Chickering and Gamson’s (1987) best teaching practices.

Components of Interteaching

Preparation guides. Before each class meeting, instructors distribute a preparation (prep) guide, which contains questions designed to guide students through their readings. Most often, the questions require students to analyze, synthesize, and evaluate course material (e.g., Bloom, 1956). In addition, the prep guides clearly define learning objectives and serve as the basis for pair discussions and exam questions (see below).

Pair discussion. During each class session, students spend the majority of their time going over the prep guide questions with a classmate. They are told to focus on discussion and minimize their reliance on notes, which seems to keep them from simply reading the answers they may have written down. In addition, although you may be tempted to allow more than two students to work together, we strongly suggest using pairs, which minimizes the potential for social loafing (Boyce & Hinline, 2002). During this time, the instructor moves around the room, facilitating discussion and answering questions.

To provide incentive for participating in the pair discussions, students earn a small number of points for each discussion they complete. Although this number may vary somewhat depending on your course objectives, participation should account for approximately 10% of a student’s overall course grade (Boyce & Hinline, 2002).

Record Sheets. After completing a pair discussion, students submit a record sheet on which they report (a) the name of their partner, (b) how their discussion went, (c) topics that were difficult to understand, and (d) any additional comments. Not only do the record sheets provide immediate feedback to the instructor, they also serve as the source for a clarifying lecture that begins the next class period.

Lecture. After reviewing the record sheets, the instructor prepares a brief lecture that covers only those topics for which students requested additional clarification. By focusing only on information that students requested, valuable class time is reserved for discussion. Moreover, because the lectures are brief and cover information that is of interest to students, they follow, and thus serve to reinforce, those behaviors we wish to promote (e.g., discussing). In contrast, traditional lectures function as antecedents and, consequently, may or may not evoke these behaviors.

Exams. Exams typically contain two essay questions, taken directly from the prep guides, along with a number of objective questions based on prep-guide material. Because the exams contain material that is based on the prep-guide questions, students typically experience less anxiety beforehand and are more likely to persevere in the class; they understand that if they prepare for class, what they discuss in class will be reflected on the exams. In addition, because exams are given frequently (i.e., at least five per semester; Boyce & Hinline, 2002), both students and instructors receive frequent feedback on how the course is going.

Quality Points. To encourage pair discussions that are of high quality, students have the opportunity to earn quality points toward their course grades. Imagine that two students discussed a prep guide question that subsequently showed up as an essay question on an exam. If both students perform well on that question (e.g., each earns an A or B), both earn additional points toward their course grades. However, if one or both of the students do not answer the question correctly (e.g., less than a B), neither receives quality points. As with the participation points, quality points should account for about 10% of a student’s course

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grade (Boyce & Himeline, 2002). Importantly, though, the inclusion of quality points does not seem to affect students' exam grades (Zinn & Saville, 2005, see below).

Is Interteaching Effective?

We have conducted several investigations on the efficacy of interteaching (and are in the process of conducting several more). In our first study (Saville, Zinn, & Elliott, 2005), we examined in a controlled laboratory setting the effectiveness of interteaching relative to other, traditional methods by randomly assigning participants to one of four conditions: interteaching, lecture, reading, or control. We found that participants in the interteaching group performed significantly better on a short, multiple-choice quiz than participants in the other groups.

We then compared interteaching to lecture within the confines of a traditional university classroom (Saville, Zinn, Neef, Van Norman, & Ferreri, 2006). In the first experiment, we alternated between interteaching and lecture several times. We found that graduate students performed better on quizzes following interteaching and that most preferred interteaching. In our second experiment, we again alternated between interteaching and lecture and counterbalanced the teaching method across two sections of an undergraduate research methods course. We found that students performed better on exams following interteaching, enjoyed interteaching more, and felt they learned more from interteaching.

In a subsequent study, we examined the effects of quality points on exam performance in two sections of an introductory psychology course (Zinn & Saville, 2005). Both sections participated in interteaching, but we alternated between quality points and no quality points, again counterbalancing the order across sections. We found that exam performance was not affected by our manipulation. Because students did not receive quality points until well after the pair discussions, we believe that the quality point contingency was too delayed to have an impact on the discussions. However, we feel that additional research is needed to determine the extent to which quality points contribute to the efficacy of interteaching.

Interteaching as Best Practice

Both empirical and anecdotal data suggest that interteaching seems to be an effective alternative to traditional teaching methods. Although additional data are needed to determine exactly what makes it effective, an examination of best teaching practices may provide useful insight.

Chickering and Gamson (1987) identified seven best teaching practices that help facilitate student learning: (a) encouraging contact between students and instructor, (b) promoting cooperation among students, (c) incorporating active learning, (d) providing timely feedback, (e) emphasizing time-on-task, (f) establishing high expectations, and (g) appreciating diversity in learning. Below we discuss how interteaching seems to support these practices.

Contact Between Students and Instructor. With interteaching, instructors interact considerably with students during the pair discussions. Because of this increased interaction, instructors and students become more comfortable with one another. Furthermore, the record sheets allow students to "talk" to the instructor in a format that is private. This increased contact is likely to facilitate teacher immediacy, which has been linked to positive student evaluations (Wilson & Taylor) and has been found to have an impact on motivation and learning (Christophel, 1990).

Cooperation. Through pair discussions (and possibly quality points), interteaching capitalizes on the benefits of cooperation. The inclusion of such cooperative contingencies likely has a positive effect on student learning (Johnson & Johnson, 2003).

Active Learning. Quite possibly the best way to learn something is to teach it to someone else. Because students have the opportunity to practice this and other important skills that will serve them later (e.g., cooperating with others, synthesizing and analyzing information), they experience the positive effects of active learning (e.g., Mathie et al., 1993).

Timely Feedback. With interteaching, students receive frequent performance feedback—from their partners during the pair discussions and from the instructor during the discussions and the subsequent clarifying lecture. Finally, with frequent exams, students receive feedback on their retention of course material. Similarly, instructors benefit from student feedback and, consequently, can monitor students' progress and improve their own teaching performance.

Time on Task. The structure of interteaching encourages students to spend more quality time focused on the course material—both in and out of class. Furthermore, the clear link between explicit objectives and exam material encourages focused study.

Establishing High Expectations. Because instructors compose the prep-guide questions, which typically require high-level comprehension and synthesis, they convey to students what level of understanding they expect. By appropriately elevating the difficulty of the prep-guide questions, instructors can convey to students that they are capable of performing at a high level.

Diversity in Learning. Interteaching requires students to engage in diverse behaviors—reading, writing, discussing, and listening. This accomplishes two primary goals. First, it acknowledges that different students might learn best in different ways. Second, and perhaps more importantly, it encourages students to improve their learning. If a student feels uncomfortable explaining his or her position on a topic at the beginning of class, he or she can work on developing these important skills.

Conclusion

Interteaching builds on well-established behavioral principles and incorporates these principles into a collaborative learning paradigm. Our empirical data, along with our own anecdotal evidence, suggests that interteaching may produce outcomes superior

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to those seen with traditional lectures. In addition, interteaching supports established best-teaching practices. We believe that interteaching is an effective, interesting, and challenging alternative to traditional classroom methods. We encourage others to give this method a try.

References

- Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives*. New York: Longman.
- Bloom, B. (1956). Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain. New York, Toronto: Longmans, Green.
- Boyce, T. E., & Hineline, P. N. (2002). Interteaching: A strategy for enhancing the user-friendliness of behavioral arrangements in the college classroom. *The Behavior Analyst*, 25, 215-226.
- Buskist, W., Cush, D., & DeGrandpre, R. J. (1991). The life and times of PSI. *Journal of Behavioral Education*, 1, 215-234.
- Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *American Association for Higher Education Bulletin*, p. 3-7.
- Christophel, D. M. (1990). The relationships among teacher immediacy behaviors, student motivation, and learning. *Communication Education*, 39(4), 323-340.
- Davis, B. G. (1993). *Tools for teaching*. San Francisco: Jossey-Bass.
- Halpern, D. F. (2004). Creating cooperative learning environments. In B. Perlman, L. I. McCann, & S. H. McFadden (Eds.), *Lessons learned: Practical advice for the teaching of psychology* (Vol. 2, pp. 165-173). Washington, DC: American Psychological Society.
- Johnson, D. W., Johnson, F., & Smith, K. A. (1998). Cooperative learning returns to college. *Change*, 30(4), 26-35.
- Johnson, D. W., & Johnson, F. P. (2003). *Joining together: Group theory and group skills* (8th ed.). Boston: Allyn & Bacon.
- Keller, F. S. (1968). Good-bye teacher... *Journal of Applied Behavior Analysis*, 1, 79-89.
- McKeachie, W. (2002). *Teaching tips: Strategies, research, and theory for college and university teachers* (11th ed.). Boston, NY: Houghton Mifflin Company.
- Michael, J. (1991). A behavioral perspective on college teaching. *Behavior Analyst*, 14(2), 229-239.
- Saville, B. K., Zinn, T. E., & Elliott, M. P. (2005). Interteaching vs. traditional methods of instruction: A preliminary analysis. *Teaching of Psychology*.
- Saville, B., Zinn, T., Neef, N., Van Norma, R., & Ferreri, S. (2006). A comparison of interteaching and lecture in the college classroom. *Journal of Applied Behavior Analysis*, 39, 49-61.
- Wilson, J. H., & Taylor, K. W. (2001). Professor immediacy as behaviors associated with liking students. *Teaching of Psychology*, 28(2), 136-138.
- Zinn, T., & Saville, B. (under review). Interteaching: The effects of quality points on exam scores. Submitted to *Teaching of Psychology*. PTN