
Teaching Through Creative Writing: Integrating Abstract Concepts into Stories Makes the Subject Come Alive for Apprehensive Learners

Reviewed By

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Biographical Information

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Recently I have been testing the learning tool of writing in a subject matter not typically approached through this way. I teach a course titled "Statistical Applications in Recreation and Park Management" but the teaching method I share here is usable for any subject matter that contains abstract concepts, including an outdoor recreation course on environmental science or a therapeutic recreation course on the biology of disabilities.

On the first day of class, at the beginning of each term students complete a "Statistics Belief Scale." Unfailingly, the results tell me what my teaching challenge will be for the semester. Typically students strongly disagree with statements like "Important problems in our field can be solved through the use of statistics," "Thinking about everyday problems I encounter will help me learn statistics," and "Statistics are becoming more and more important in the average citizen's life." As well, students tell me through the survey that they believe statistics is a very difficult subject and that they will not enjoy or do well in the course.

Students' initial dread of statistics is not unique to my course. Colleagues (Bouthyette, 1992; Flannery, 1993) agree that college student anxiety about these classes (as well as science and math) often results from the perception of the concepts as a mass of difficult, abstract information loaded with minute, useless details. However, even with the security of common universal experience, I constantly try to promote more effective learning by developing curricular approaches to relieve some of this uneasiness.

Until recently my answer to the challenge had been daily quizzes (over the material covered that day in class), weekly 2-person team homework problem assignments, and two research article critiques (articles chosen typically from the Journal of Leisure Research). The daily quizzes, because they test small amounts of material immediately

following their learning, have been very successful in changing students beliefs that the subject of statistics is difficult and that they cannot perform well in the course. However, the other two types of assignments, which are intended to enable students to understand the application of statistics to their personal and professional lives, have been less effective.

Kirkland (1997) suggested that abstract concepts offered within the context of a story with characters, plots and places enable students to understand and remember concepts more easily than a textbook presentation can. Kirkland's application of this idea was in college-level biology. As well, Burke (1995), applying the idea in a general education chemistry course, agreed that a creative approach diminishes student anxiety and enhances learning. With this research in mind, I have developed a creative writing assignment for my course that requires students to provide the story context for her/his own learning. Like Kirkland and Burke I have found that this simple and lighthearted method reduces the abstractness of the material, by placing it into the student's own language and imagination. Students tell me on course evaluations "The stats concepts were more easily understood after using my imagination to put together the stories," "I remember things for the quizzes by images from my story."

My first step in using creative writing for this purpose is to address a statistical content area, such as measures of central tendency (mean, median and mode), using a traditional approach. Students have a reading assignment in the text they are to complete before class, I lecture in class, and afterwards students ask questions. I also still give the daily quizzes and the 2-person team homework problem assignments. To all this, however, I have added a variation.

For each unit of content (usually one per every two weeks) students turn in a short story depicting the "characters" from that content area. In these stories students are encouraged to manipulate and create familiar mental images that help them to understand what they have read. They are encouraged to focus on having fun with their imaginations by giving the statistical concepts such characterizations as animals or fictional people. Students who may have previously played a passive role become active learners by integrating this material into the context of the plot, characters, and setting of a story.

While I encourage even wild creativity in the stories (which gets more so as the semester progresses), students work is graded instead according to how many of the main concepts from the reading are included and whether their roles are accurate. The stories are usually one page in length and to avoid making them a burden for those who feel they are not particularly creative, I provide a content scenario as a starting point for each. For example, when covering the mean, median and mode the following scenarios serve as a starting point:

Scenario One: The word "average" is used in everyday speech to describe what is typical and commonplace. But the three most often used averages - mean, median, and mode - describe the typical and commonplace very differently. This is to be the plot of

your story. Here we go: A search is underway for that one princess who best represents all the ladies of the kingdom. Write your story as a fairy tale, assuming that the mean, median and the mode are the main characters of the three princesses who are the finalists for this honor.

Or

Scenario Two: When the mean, median and mode are plotted as a frequency distribution the result may be skewed. This is to be the plot of your story. Here we go: Andy, Ben and Jerry were neck and neck in the final day's down hill skiing competition. After the completion of all the day's runs all three athletes declare themselves the winner even though they have three different times. As the sports reporter for the newspaper covering the competition you, Mary Nononsense, have been assigned to file a complete report on the controversy. Write your story as a news article - don't forget that the editors want quotes.

Thus, a typical lesson plan for the unit on measures of central tendency looks something like this:

Course Syllabus: Students are instructed via the course syllabus to read the text chapter on measures of central tendency prior to the first class period for this unit.

Course Syllabus: Also via the course syllabus students are given story idea scenarios (above).

Day One for the Unit: As their "admission ticket" to that day's class as they enter the room students turn in a one page short story depicting any concept(s) from the reading assignment. I then lecture on definitions and examples of the mean, median, and mode; students ask questions before taking a short quiz on what was just covered this day.

Day Two for the Unit: I review Day One's lecture by reading out loud to the class one or two of the short stories that used the first scenario (above) as the plot inspiration. I then lecture on measures of central tendency and the shape of the distribution; students ask questions before taking a short quiz on what was covered this day.

Day Three for the Unit: I review Day Two's lecture by reading out loud to the class one or two of the short stories that used the second scenario (above) as the plot inspiration. I then lecture on selecting the most appropriate measure of central tendency; students ask questions before taking a short quiz on what was covered this day.

Day Four for the Unit: The 2-person team homework assignment on measures of central tendency is due and class time is spent peer grading and working through trouble spots on the assignment (two teams are combined). Individual teams spend the last 10 minutes of class correcting their work for grading. Teams submit all work to me including the part that was completed prior to class and their corrections or enhancements done in class. Also, individually, students write a paragraph on what they learned through the

assignment. Grading is both for the amount of assignment completed prior to class and accuracy of the work on the assignment after the in-class work.

This creative writing approach to learning the abstract concepts of statistics, as well as the daily quiz schedule for that matter, are initially met by students with trepidation. The approach is very new to them. Even though I patiently explain the research support for the method it takes a week or so of experiencing the learning empowerment to convince them. The real proof that it all works comes, however, from the assessment at the end of the semester. For the second time, on the last day of class, students complete the "Statistics Belief Scale." Their average responses are compared to the first day of the semester and typically reward me with gratifyingly large differences.

As a postscript I am currently tinkering with the article critique assignment as well. I am adding a writing component by changing the requirement from one of critiquing what the authors of a research article published in a professional journal wrote about the statistics used in the study, to asking students to write the discussion section themselves, giving them the study purpose and statistical results as the starting point.

Overall, it has been a worthwhile experiment to add both creative and professional writing to the learning tasks required for abstract concepts, such as in statistics. While not directly tested, students appear to actually learn more from this approach than through the more common plan of read, lecture and test. What has been directly tested and confirmed, nonetheless, is students now consider statistics to be less fearsome and more relevant to their personal and professional lives.

References

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