On Teaching and Learning

Editors:
JANINE BEMPECHAT
DEAN K. WHITLA

On Teaching and Learning publishes articles and essays on aspects of pedagogical practice and on research that has implications for teaching.

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How I Could Have Done Much Better

The faculty discussions should focus extensively on the quality of instruction of the individual. There should be careful consideration of the kind of reports that the instructor has gotten from students and colleagues. This kind of concern may occasionally extend to dropping in on classes to find out how well he or she is doing.

As a form of escapism, I think that we have gone over to the verbiage test — how many words has the individual had printed in some journal or another. Nobody reads these articles, they just weigh them. This is particularly so in the social sciences. It is very hard to determine whether a person is a competent teacher. There is perhaps some sense of invasion of privacy when one attempts to do so. As a substitute, then, we weigh these papers.

In sum, if I had to do it over again I would do better. Because my writing was so demanding, I might again fall short of being an ideal teacher, but I would most definitely give more time to reading student papers and examinations, preparing lectures, and certainly learn to speak clear and effective English at an earlier age.

How Students Learn

Ellen J. Langer

In this paper, I would like to discuss an aspect of psychology as it relates to the teaching and learning experience. I hope to be able to impart a little knowledge, and in this instance hope that a little knowledge is a helpful thing. I am going to begin by talking about ways of structuring information that we present to students, and the possible consequences of structuring it in one way or another. Specifically, I will discuss three areas of my own research — the importance of perceived control, the deleterious consequences of helping, and some of the causes of mindlessness. I will take these up in turn.

We are all aware that it is very important as a teacher to be enthusiastic and engaging. One way to engage people is to encourage them to take control over various aspects of a course. While people believe this to be true, I do not think they have any sense that it is quite as important as it is. Indeed, if one looks at courses that are prepared, especially by new assistant professors and graduate students, one finds that there is not nearly as much choice as perhaps there should be.

Let me persuade you of the importance of this variable by way of illustration. A colleague and I conducted a study of the effects of choice on the mental health of elderly people. Essentially, we did three things. We gave one group of residents a pep talk in which we stressed the importance of their own decisions. We then gave them simple kinds of decisions to make, such as whether they wanted to see a movie on a Tuesday or a Thursday. Finally, we gave them a plant to take care of. They selected the plant and it was their responsibility to make all of the decisions that were related to its care.

We compared this group with another group that was also given a pep talk, but this talk stressed staff support rather than self support, i.e. how the staff was going to care for them and help them with decisions they had to make. Their decisions were essentially made for them. For example, they may have been told that they were going to see the movie on the Thursday. Also, they were given a plant that the staff was going to care for.
We took several measures before we began this intervention and then again three weeks afterwards. We can summarize the results very simply. The people in the “choice” condition became more alert, more active, and happier than those in the “non-choice” condition. What was even more interesting, though, was our discovery eighteen months later that half as many people in the group encouraged to make choices, given choices to make and a plant to care for, had died. That is, twice as many people who were treated the way people are typically treated in these establishments had died (15 out of 43 vs. 7 out of 44).

A great deal of our research in a variety of settings (e.g., with people who have undergone major surgery, people in gambling situations, in crowded situations, people who have been divorced) has shown that positive benefits may accrue by providing and encouraging a sense of choice and control. In academic settings, psychologists find, for example, that students who are given a choice of methods by which to learn speed reading ultimately read faster than students who are assigned to one or another method. Similarly, when individuals are allowed to choose the order of questions on an IQ test, they perform better than those who are not allowed to choose. The evidence suggests that teachers may find it beneficial to encourage students to take responsibility for as much of a given course as possible.

As teachers we all consider ourselves helpers. Why do we help? We help out of concern, we help kindly, and we help with the intention of imparting information. We stand at the front of the class and disseminate important information and our students sit and listen. At the same time, we may unwittingly be doing them a disservice. Again, let me explain by way of an experimental study. We conducted research in which we varied the amount of help that individuals received in solving puzzles (We purposely chose such a meaningless task so as not to enfeeble anyone in any way that is important). One group received no treatment but was asked to solve the puzzles in the second phase of the study. They served as a no-treatment baseline comparison group. A second group was actively helped — they were shown how to solve the puzzles. A third group was simply encouraged to find the solutions for themselves. We answered their questions with other questions rather than to supply them with the solutions.

Everyone was then given a new puzzle. Not surprisingly, we found that the “encouraged” group outperformed both of the other groups. What was most interesting was that the baseline group, a group that before this test puzzle had never seen the puzzle, outperformed the group that had been helped. Of course, we must not assume that all helping at all times is going to result in incapacitation, but it is interesting to think of circumstances when this might occur.

We do not typically think of how helping may hurt, because we feel so good when we do help. This good feeling may serve as a cue that we have, in fact, overhelped. To be sure, no one intentionally overhelps. One never finds oneself having to say, “Let me help you because you don’t need it”. Whenever anyone helps another, it is because there has been an assessment that the person is in need of help. The more information that is given, the more competent the helper feels, but also the needier the helped individual is perceived by him or herself to have been. Helping can thus be seen as a double-edged sword. Moreover, when we tie up loose ends to answer a question, we have actually given someone a sealed package. In so doing, we make it harder for the people we are trying to help to get inside those boxes and insert themselves in the information we have given them — to grab a hold of it in any way that is unique to that particular individual.

Ironically, then, the times that we feel best about helping others may also be the very times that we are setting the stage for their incompetence.

One solution may be to answer questions with other questions. Of course, if someone asks for a particular fact, surely the answer must be given. However, if someone asks a question whose answer may require that he or she think carefully and manipulate different sorts of facts and ideas, the student must not be deprived of the opportunity to do so. Our teaching should consist of guiding, rather than governing, student learning. It is important to keep that in mind so that the student does most of the work, despite how good it feels when we do it ourselves.

Finally, let us turn to mindlessness and its relevance in the learning situation. Mindlessness refers to a state in which people respond to the world as if they were automatons. They rely on categories and distinctions that have been drawn in the past, rather than actively creating new categories. In a sense, they are not making new meaning of events in their environment. Much of the research that we have done suggests that there may be very real negative consequences that result from this form of engagement with the environment. We have learned that the way information initially is processed may determine the way in which it is used. In a sense, when information is processed mindlessly, it becomes frozen in the way that it was originally taken in.

There are essentially three ways that we give information that may set the stage for other people’s mindlessness. First, when we impart
irrelevant information, individuals tend not to actively think about it—they tend to accept it as is. For example, if someone were to tell you that people who have six fingers on one hand are stupid, that they are insomniacs, and that they walk funny, you would probably just take it in, because for most people the information is not relevant to any of their ongoing concerns. However, if at some point in the future you were to discover a sixth finger on your hand, you would most likely become stupid, an insomniac, and you would walk funny. Why? Because it would not occur to you that it could be otherwise. Teachers, of course, can not and some would argue, should not, be responsible for every point they make to be relevant to every student. There is still a way, however, to prevent mindlessness that will become clear.

Another way in which we encourage people to mindlessly process information is by holding ourselves up as authorities. When we are in a position of power people will recognize this. While it is not something we should shy away from, we should nonetheless recognize that when we teach we are addressing individuals who are processing the information we provide. If they process it without questioning it, because after all, we said it so it must be so, then it may only be available in that particular form in the future.

One way to prevent mindlessness, whether due to the perceived irrelevance of the information or the perceived authority of the one giving the information, is to present information in a more conditional way. Again, let me explain by way of research simplified to help make the point. We introduced two groups of people to a series of objects in what they thought was a study of consumer behavior. We introduced them to the objects in one of two ways. One group was told, for example, “This is a dog’s chew toy.” The other group was told “This could be a dog’s chew toy.” The only thing that differentiated the two conditions was whether the information was presented in an absolute or a conditional fashion. All subjects had evaluated the products from most to least expensive when the experimenter exclaimed, “Oh no! You were supposed to rate the products from least to most expensive. We can’t cross out on these forms and I don’t have any others. What are we going to do?” The research question was, who would think of using the dog’s chew toy as an eraser? The answer was, only those people who were introduced to the object in a conditional fashion. For those in the absolute condition, the object remained a dog’s chew toy. Thus, using a simple linguistic variation that suggests that the information is unconditional is a third way we may unwittingly foster mindlessness. Therefore, conveying the conditional nature of the information given may prevent it.

We can try to ensure that our students “know” the information we want them to acquire by testing their accumulated knowledge. In so doing, however, we may be depriving them of the education that I think we ought to be providing. We want our students not only to be able to report information as it is, but also to be able to use that information in creative ways, to be able to think of that information flexibly, to know that a dog’s chew toy can also be an eraser. One could argue that this is not a problem when teaching at the college level because most of the material is necessarily conditional. For example, what I have just described is Langer’s theory of mindlessness and mindfulness, or Langer’s model. Built into a notion of a theory, model, or hypothesis is some uncertainty. However, new data suggest that if a model, for example, is presented unconditionally then it too may be accepted absolutely and the rigid relationship is formed. Perhaps students need to be taught that the world may be probabilistically arranged. The answers we as teachers give should be “it depends,” rather than “it is.”

The evidence from these three areas of research suggests that there may be a good deal of power in uncertainty. The more uncertain one is (noting that uncertain is not the same thing as not confident), the less likely one is to make decisions for others, to overhelp them, and to speak with absolute certainty about any issue.

There is an illustrative story about a woman who was seen preparing dinner. She had a roast beef and she took off a large slice of it before cooking it. When asked why she did this she said, “Well that’s what my mother always did.” So, the observer sought out her mother and asked, “Why do you cut off a large slice of roast beef before you cook it?” Her mother said, “Because that’s what my mother always did.” The observer finally found the original woman’s grandmother and asked, “Why do you always slice a large piece of roast beef off before you cook it?” She replied, “That’s the only way it will fit in the pot.” The point of this story is that when we originally learn something there may be a reason for it that makes sense in that context at that time. What we want to do is to give our students information so that as the context changes, that information will still be of use to them. Otherwise we’re all wasting a great deal of roast beef.
The Contributors

Daniel Bell is Henry Ford II Professor of Social Sciences at Harvard University. A gifted scholar, Mr. Bell teaches courses on political sociology and on the impact of technology on society.

Carola Eisenberg, a psychiatrist, is the Dean for Student Affairs in the Faculty of Medicine at Harvard University and a Lecturer on Psychiatry at the Harvard Medical School. A native of Argentina, educated there and in the United States, her students benefit from her experience, born of several cultures and many years of teaching.

John Kenneth Galbraith is Paul M. Walburg Professor of Economics, Emeritus, at Harvard University. Widely recognized for his writings, Mr. Galbraith has also had an impact as a teacher to generations of undergraduate and graduate students.

Andrew Garrod is Assistant Professor of Education at Dartmouth College. Born in India, educated in Great Britain and in the United States, Mr. Garrod teaches adolescent development.

Stephen Jay Gould is Professor of Geology and Alexander Agassiz Professor of Zoology in the Museum of Comparative Zoology at Harvard University. Mr. Gould is a gifted teacher as well as a scientist. His extremely popular course on geology and paleontology is offered as part of Harvard's undergraduate CORE program.

Ellen Langer is Professor of Psychology at Harvard University. A noted personality theorist, Ms. Langer's courses on social psychology and on the psychology of control are outstanding offerings in the Harvard curriculum.

David Riesman is Henry Ford II Professor of Social Sciences, Emeritus, at Harvard University. Mr. Riesman's widely acclaimed career began with the publication of The Lonely Crowd, now an American classic. Mr. Riesman for years taught an immensely popular undergraduate course on the American culture.

Helen Vendler is William R. Kenan Professor of English and American Literature and Language at Harvard University. Recognized as one of the nation's leading literary critics, she is also a gifted teacher, offering courses on American poetry.

Editors' Comment: The papers authored by Professors Galbraith, Langer, Riesman, Bell, Gould and Eisenberg were presented originally as lectures in the Harvard-Danforth Center's Professional Training Series.