AP-LS Teaching Techniques

Creating Witnesses to Teach about Witnesses: A Classroom Demonstration

Brian H. Bornstein
University of Nebraska-Lincoln

Abstract

Students in two sections of an upper-level undergraduate class on memory were unsuspecting witnesses to a brief encounter. Their memory for what they had witnessed was tested at intervals of 2 weeks and approximately 8 months. At the second test, students also evaluated the effectiveness of the demonstration. There were 3 main findings: First, the students made numerous errors at both delay intervals, although they remembered slightly more after 8 months than they did after 2 weeks; second, they did not remember less (at both retention intervals) than they expected to remember (i.e., they were not overconfident); and third, they perceived the demonstration to be a helpful instructional device.

Introduction

Eyewitness memory is a popular topic in both introductory psychology courses and upper-level courses on cognitive psychology. In addition to its usefulness for illustrating the operation of basic memory processes within a naturalistic setting, it has also recently become something of a "hot topic" within the larger social milieu. This increasing public interest can be seen, for example, in the recent spate of books and articles published on the issues of recovered memory (e.g., Brenneis, 1997; Loftus & Ketcham, 1994; Lynn & McConkey, 1998) and erroneous convictions based on eyewitness identifications (e.g., Scheck, Neufeld, & Dwyer, 2000; Wells et al., 1998).

As a large number of psychological issues can be taught effectively through classroom demonstrations (e.g., Ware & Johnson, 1996), the purpose of the present research was to explore the pedagogical effectiveness of an in-class eyewitness memory demonstration. Specifically, it addresses the question of whether making students witnesses facilitates their learning about eyewitness memory.

Method

Participants

Participants were students in two sections of an upper-level undergraduate course on memory taught by the author. The two sections were taught during consecutive class periods. Eighty-six students (out of a total enrollment of 101) participated in Phase 1, and 45 students participated in Phase 2.

Procedure

Target event. A female confederate interrupted class on the pretext of looking for a student. A brief dialogue with the instructor established that she was looking in the wrong classroom. The confederate came several steps inside the doorway so that she was in full view of the entire class. She adhered to a rehearsed script so that the conversation would be nearly identical for both sections. The entire interaction took approximately 15 seconds.

Phase 1 testing. Two weeks after the target event, students in both classes were tested on their memory for the event. Participation was voluntary, and students who participated received extra credit (all students who were present that day participated, $N = 86$). They were told to imagine that the woman who had interrupted class was suspected of assaulting a person later that same day, making their eyewitness memory relevant to the case. The students were asked 13 questions about the event (see Table 1), encompassing both verbal (e.g., "What was the name of the person she was looking for?") and descriptive information (e.g., "What color was her hair?"). Choices were given for some questions (e.g., "Was her hair straight or curly?") but not for others (e.g., "What color was her sweater?"). Students were told to guess if they were unsure.

In addition, they were asked to estimate the percentage of their classmates who they thought would answer the question correctly (12 students who did not witness the target event made only these estimates). Although these estimates are a somewhat atypical measure of eyewitness confidence—as opposed to a straight confidence judgment for each question—it was felt that they would better suit the demonstration's instructional purposes. Furthermore, any discrepancy between the students' estimated percentage correct and the observed percentage correct would still demonstrate a general tendency toward overconfidence (or underconfidence).

Phase 2 testing. Approximately 7 months after Phase 1 (8 months after the target event), all of the students in both sections for whom addresses could be found ($N = 86$) were sent a follow-up questionnaire along with a stamped, addressed return envelope. Forty-five students returned completed questionnaires, for a 52% response rate. A cover letter informed them of the purpose of the study and described the questionnaire, which had two parts.

In the first part of the questionnaire, they were given the same instructions as at Phase 1 and answered the same 13 questions, with the sole modification that their estimates were to reflect what percentage of their classmates they thought would be correct at present. Signed consent for combining data from Phases 1 and 2 was obtained. In addition, they were asked how many times they had thought about the demonstration prior to completing the Phase 2 questionnaire (less than 2 times, 3-5 times, or more than 5 times).

The second part of the Phase 2 questionnaire was an evaluation of the demonstration's pedagogical effectiveness. Students rated their agreement with 7 statements (e.g., "The demonstration helped me to understand concepts relating to eyewitness memory") on a 7-point scale ranging from -3 (strongly disagree) to +3 (strongly

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agree). This part of the questionnaire contained no identifying information; Parts 1 and 2 were separated upon receipt by an assistant to the experimenter.

Results

Memory: Phase One

Students' memory performance is shown in Table 1. It ranged from very poor (e.g., no one recalled the name of the student the target was seeking) to quite good (e.g., 71.6% correctly remembered that she was blond). The mean number of correct answers was 4.9 out of 13, or 37.7% (*SD* = 1.6, *Mdn* = 5). The mean estimated percent correct across all questions was 39.2%. Students' estimates of the percentage of witnesses who would be correct exceeded their actual accuracy for 7 of the 13 questions and fell below it for the other 6 questions, demonstrating no consistent tendency toward over- or underconfidence. In other words, they did not think they would remember more (or less) information than they actually did overall.

Table 1
Performance on the Eyewitness Memory Questionnaire, Phases 1 and 2

	[a]Phase 1 (% Correct)		[b]Phase 2 (% Correct)	
Question	Actual	Estimated	Actual	Estimated
1. Class she was looking for.	18.9	25.7	37.5	26.2
2. Name of person seeking.	0.0	7.5	2.5	6.8
3. Hair color.	71.6	48.2	70.0	41.6
4. Hair length.	43.2	42.7	40.0	42.8
5. Hair style (straight or curly?).	47.3	49.6	50.0	44.1
6. Race.	82.4	80.2	90.0	80.2
7. Age.	40.6	53.8	62.5	50.2
8. Carrying anything (yes or no?).	78.4	50.6	95.0	51.6
9. If "Yes" to #7, carrying what.	58.6	35.5	39.5	36.3
10. Wearing glasses (yes or no?).	28.4	45.9	60.0	42.4
11. Color of t-shirt.	1.4	24.9	7.5	24.6
12. Color of sweater.	8.1	23.1	15.0	23.8
13. Color of pants.	24.3	22.2	55.0	27.2

Note. All questions pertained to the target. Questions were asked in free response format except those with choices noted in parentheses.
[a]*N* = 74 for actual, 86 for estimated, except Question 9 (N = 58 actual, 70 estimated).
[b]N = 40 for actual, 44 for estimated, except Question 9 (N = 38 actual, 42 estimated).

Memory: Phase Two

Table 1 also shows students' memory performance after an 8-month delay. The mean number of correct answers was 6 out of 13, or 46.2% (*SD* = 1.9, *Mdn* = 6). The mean estimated percent correct across all questions was 38.3%, approximately the same as at Phase 1. Students' estimates of the percentage of witnesses who would be correct exceeded their actual accuracy for 4 of the 13 questions and fell below it for the other 9 questions, demonstrating a slight tendency toward underconfidence. This underconfidence effect appears to be the result of their improved accuracy relative to Phase 1, without a corresponding increase in their estimates of how well they expected the class as a whole would perform.

The students reported not having thought about the demonstration a great deal since the class ended. Sixty-seven percent said they had thought about it twice or less, 26% reported thinking about it 3-5 times, and only 7% said that they had thought about it more than 5 times. Thus, the improvement in accuracy occurred even in the absence of much additional rehearsal.

Evaluation

The findings of the evaluation were very positive overall. For example, 62% of participants strongly agreed that the demonstration helped them to understand important concepts, and 82% strongly agreed that such a demonstration should be used in future sections of the class. In addition, a majority of participants strongly disagreed that the demonstration took up class time unnecessarily (71%). A summary of results of the evaluation is presented in Table 2. It is interesting to note that participants' evaluations were favorable despite their perception that the demonstration did not have a strong direct effect on their test performance (Statement 4). As a manipulation check, the evaluation also showed that most students were unaware of the nature of the demonstration (67% strongly disagreed with Statement 5: "I suspected when the demonstration took place that it was part of a class experiment").

Table 2
Students' Evaluation of the Demonstration and Explanation of Results

Statement	Mean	SD	Mdn
1. Helped me to understand concepts relating to eyewitness memory.	2.57	0.70	3.00
2. Helped me to understand how eyewitness memory research is done.	2.16	1.04	2.00
3. Took up class time unnecessarily.	-1.98	1.96	-3.00
4. My exam performance benefited.	0.82	1.90	1.00
5. I suspected when it took place that it was part of a class experiment.	-1.78	1.95	-3.00
6. I learned more about eyewitness memory than I would have without the demonstration.	1.60	1.72	2.00
7. This demonstration, or one like it, should be used in future class sections.	2.76	0.57	3.00

Note. Evaluations were made on a scale ranging from -3 (strongly disagree) to +3 (strongly agree). Ns = 42 for Question 1, 45 for Questions 2-7.

Discussion

The present experiment provided an effective demonstration of eyewitness memory. The demonstration yielded three main findings. First, it conveyed to students the fallibility of memory: two weeks after witnessing the event, they were correct on an average of fewer than 5 of 13 questions (several of which were asked in a two-alternative forced choice format). Their slightly improved accuracy nearly 8 months after the event can likely be attributed to the in-class presentation and discussion of the results, as they reported rehearsing the information relatively little since the class ended. Without such intervening elaboration of the target event, witnesses' memory typically deteriorates fairly rapidly (Deffenbacher, 1996). Students were not suspicious of the nature of the demonstration when it took place. Thus, the present findings also support the feasibility of conducting eyewitness research in field settings (Cutshall & Yuille, 1989).

Second, students did not expect to remember more than they did at either delay interval, suggesting that they were not overconfident about their memory for the event. However, because they did not make confidence judgments about their own memories—instead merely estimating class performance as a whole—it was not possible to construct a direct measure of the relationship between individuals' accuracy and their confidence. Third, students perceived this naturalistic demonstration as a very useful pedagogical device, suggesting that it would make a worthwhile addition to instructors' teaching repertoire.

There are two limitations to the present demonstration. First, the procedure did not vary whether or not participants were exposed to misinformation. Misinformation research addresses the effect of misleading post-event information (Loftus, 1992); it is a large sub-field of eyewitness memory research and is particularly relevant to suggestibility effects and the recovered memory debate (e.g., Loftus, 1993). Second, the procedure did not include a lineup identification task. Visual identification is an important component of many, if not most, eyewitness situations (Wells, 1993).

Adding either or both of these components to the present demonstration procedure would be relatively easy, especially if multiple class sections were available. For example, one section could be presented with misleading information, while another section was not; or one section could view a target-present lineup, while another section viewed a target-absent lineup. Incorporating these task elements would further enhance the effectiveness of using an eyewitness demonstration as an instructional tool.

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Author Note

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Address correspondence to the author at 335 Burnett Hall, Department of Psychology, University of Nebraska, Lincoln, NE 68588-0308. Email: bbornstein2@unl.edu.

Editors Introduction: We are pleased to present the third article in the new Teaching Techniques section. The Teaching Techniques section, sponsored by the APLS Teaching, Training, and Careers Committee, offers useful ideas and activities for those of us who teach (or plan to teach) courses in Psychology and Law, Forensic Psychology, or more specialized areas of legal psychology. We hope that the Teaching Techniques section of the Newsletter will become the best place to find activities, simulations, and demonstrations that engage students in the learning process and help professors to teach important content in psychology and law.

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