

Teaching Psychology Can Be Magical

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We all know that for students to learn, they must pay attention to the material being presented to them. During my 75-minute classes, my mind sometimes begins to wander and I suspect that if *my* mind wanders, the students' minds are wandering as well. The best way to keep us all engaged is to actively involve both the student and the professor in the presentation. Textbook teaching manuals are full of active learning exercises. Today, I want to focus on the use of magic in teaching introduction to psychology.

Nearly everyone is interested in magic. Therefore, anytime you can integrate a simple magic trick into your class, you will increase the interest level and keep your students' minds from wandering. The magical thing about magic is that you don't even have to be good to put on a reasonable classroom demonstration. Below, I have listed several simple magic tricks and I have indicated how they might be integrated into the introduction to psychology class. The tricks can be used when discussing the topics listed below, or any one of them can be used to introduce the topic of experimental control. I use several of them during the course of my research methods and statistics classes. The more you use the tricks, the more fun you will have.

ESP

A large percentage of the general population and a large percentage of psychology students believe in ESP. By performing ESP tricks in your class and identifying them as mere "tricks" that anyone can learn, you can, with appropriate discussion, debunk those ingrained beliefs. Here are several ESP tricks that you can easily do in your class:

Mental Telepathy: Card trick

One of the easiest ESP tricks is the mental telepathy card trick. This trick requires a confederate, but it can be very convincing.

Take out regular deck of 52 playing cards, turn your back to the class, and while your back is turned ask a student to pick a card at random. While your back is still turned, ask him/her to show the card to all the students in the class, but not to you. Next, instruct the student to hide the card. Once the card is hidden, you can turn to face the class. Now everyone in the class knows the card, but you. So you must ask the class to try to use mental telepathy to send the card to your mind.

The key to all magic tricks is to sell the trick to your class. You really have to ham it up. The more ham, the better, and the more fun you will have with the trick. Tell your class to concentrate very hard on the card that was chosen. Then you need to look like you are concentrating and trying to read their minds, but just can't quite make out the card. After a minute or so, tell the students to concentrate harder because you are not getting the card. Finally, tell them that you are getting too many images and that they should all close their eyes and concentrate on the one card. While the students are watching you put on your performance at the front of the room or when they all have their eyes closed, your confederate at the back of the room just writes down the card on a piece of paper and shows it to you.

Now you need to ham it up and say that you are getting the color of the card, then you are getting the suit, then it is a face card, or a number, until you have named the card.

As with all the tricks described in this paper, take your time. The longer you can string it out, within reason, the better.

(There are several different variations of this trick. You can use "mental telepathy" to guess a "random" name out of a phone book. Have a student choose two different numbers between 1 and 10, with the first number being the page number in a phone book and the second being the order of names on any one page. Your confederate needs only a sheet of paper listing the first ten names on the first 10 pages in the telephone book and a blank sheet on which to write the answer big enough for you to read.)

Mental Telepathy: Another Card Trick

This trick also requires a confederate, but this time the confederate "guesses" the card. To do this, you must tell the confederate, before the class starts, what card is going to be picked, and then you must force a random student to pick that particular card.

Begin by choosing a random student in the class (who is actually your confederate) and tell him or her to be ready to receive the mental image from you. Next, choose a random student to select a card at random from a deck of cards. (This student can be anyone; you might choose the most skeptical student in the class.)

It is easy to force this student to pick the card that you want. Before you begin, make sure that the card you want to be picked is the top card in the deck. Then go to the student who is to pick the card and then ask him or her for a number between 10 and 15. (Let's say she chooses 13.) Then in front of her, you start to count down to the 13th card. Make sure that when you do this, you take the top card on the deck and place it face down on her desk, then take the second card and place it face down on top of the first card, and so on until you have counted to 13. (You will now have a stack of 13 cards with the card you want the student to pick on the bottom of the stack.) Next you say, "Oh shoot, I forgot that we should deal the cards face up, not face down!" Then take the stack of cards and place it back on top of the deck. (Now the card that was on the top of the deck is now the 13th card down.) Finally, all you have to do is to count down to the 13th card, placing each card face up. The 13th card will be the one that originally was on the top of the deck, the one you told your confederate to pick.

Now, "send" your mental image of the card to your confederate. Before class, you will have encouraged him or her to take some time while receiving your vibes. During class, draw out the sending process and allow the confederate plenty of time to ham it up in trying to guess the card. Again, the more ham the better.

(There are also several variations of this trick. An easy one is to do it without a confederate. Just choose a student to count the cards. In this variation, after you have counted and replaced the cards on the deck, have the *student* count out the cards face down and look at the 13th card and try to send it to you using mental telepathy.)

Precognition or Mental Telepathy Trick: The Backward Card Trick

This is a really cool trick, but it requires a special set of trick cards and some practice. You can purchase this deck at any good magic shop. I begin this trick by pulling an invisible deck of cards out of my pocket and handing the invisible deck to anyone in the classroom. Then

I ask that person to pass the deck to anyone in the class and to keep passing for 3 or 4 more times. (This makes it very unlikely that I could have a confederate helping me with the trick.) Once the invisible deck has been randomly passed around the room, I ask the person who ends up with the deck to fan the deck, remember that it is invisible, and pick out a card. Now I ask her to tell us all what card she pulled out of the deck. (Just for fun, I usually ask the person sitting next to her to look at the invisible card and verify that she reported the card correctly.) I now write the name of the card on the board. Let's suppose for the rest of the trick that the card is the five of hearts (I write 5♥ on the board).

Now it is time to pull the trick deck out of your pocket. I tell the students that before class, I turned one card backwards, and wouldn't it be interesting if the backward card was the five of hearts? I proceed to take the deck out of the box, fan the cards, and then show them that there is only one backwards card. I ask one of the students to pull the backward card out of the deck and show it to the rest of the class. The card is the five of hearts. This, I tell them, either demonstrates precognition (I knew beforehand which card they were going to pick) or mental telepathy (the student could read my mind and knew which card was backwards).

The key to this is the trick deck. It really is a deck of 52 cards, but half of the cards are turned one way, and the other half are turned the other way. And the backs of the cards have a special tacky coating. The cards are arranged such that all the even cards are facing one way, and all the odd cards are facing the other way. In addition, the cards are paired such that the first card is facing toward you and the next card is facing the other way. Also, each pair of cards is arranged such that a diamond is always paired with a club and a heart is always paired with a spade, and the face values of the two cards always adds to 13. Therefore, the five of hearts is always paired with the eight of spades.

To make the trick work, you just have to do some mental arithmetic, then find the card that is paired with the chosen card. Because you are looking for the five of hearts, you need to locate the eight of spades. Following the instructions that comes with the deck of cards, you separate the target card, while keeping the other cards tightly together such that it appears that there is only one backward card, the five of spades. You have a student pull out the backward card, and there you have it.

The really nice thing about this is that you can use it over and over again, and it works every time. But remember that this trick, like most magic tricks, requires some practice to pull off.

(I suggest that you also keep a real deck of cards with a similar looking box in another pocket and show the real deck to the students when they ask to see the deck.)

Mental Telepathy: The Cell Phone Trick

This is a modernization of an old telephone trick. (I first saw this version of the trick on the Penn and Teller television show.) To do this trick, you need a cellular telephone and a confederate who is willing to listen at a remote location for several minutes. (Ideally, your confederate should have a speakerphone. In our department office, our secretaries have speakerphones, and they make great confederates.)

To do this trick, tell your class that you have a psychic friend. You are going to let the class pick a random card and have a student use a cell phone to call your psychic friend, who will tell the student caller the name of the card. The key to this trick is to dial your confederate on your own cell phone before the class begins and then take your open cell phone into class.

This way, the confederate can hear everything that goes on in the classroom, including the name of the card. When your student calls, your confederate can easily name the card.

If you hide your phone in your briefcase, purse or pocket, you can ask in class if any of the students have a cell phone that you can use to call the confederate. (You probably will be surprised at how many students pull out their cell phones.) If no one has a cell phone, pull yours out and offer it to one of your students. (Remember to disconnect before you give your phone to the student to make the call.)

(There are several obvious variations of this trick. You certainly do not have to choose a card. You can make up a name by randomly combining the names of several of your students, or randomly pick a word out of a dictionary or a telephone book. If your confederate has a duplicate dictionary, he or she can look up the word and even give the student the exact definition.)

Match the Words in Two Books Trick

It is not exactly clear what type of ESP this trick demonstrates, but it is a really cool trick. In this one, you randomly select words in randomly selected books, and the words match. This trick takes a *lot* of preparation, but it is worth it. All you need is a steno notepad (the kind with a spiral binding at the top), any dictionary, and your class textbook. (I suggest you use Psychology in Action by Karen Huffman, Mark Vernoy, and Judith Vernoy for your textbook.)

At the very beginning of class, before you explain the trick, go over to the *far right side* of your classroom and have 5 or 6 students write down random 5-digit numbers on your steno pad. Make sure that all the students use the same pen to write the numbers. (Later, you will ask students on the *far left side* of your classroom to add these 5-digit numbers to get a 6-digit number.) After you have done this, you should have a list that looks something like this on your steno pad:

45683
38888
41111
23418
99999
78632

It does not matter at all what numbers they write down. (You will make sure later that they add to the proper number.) When class begins, tell the class that you want to try something. Ask them what they think the odds are that any two randomly chosen words from two different books will be the same. The guesses will indicate that the chance of this happening is extremely remote.

Now it is time to choose one of the books. Ask three students to loan you one of their textbooks. (Make sure that one of those books is your textbook. In an introductory psychology class many, if not most, of the students carry the book around with them.) Next, ask for a volunteer to choose the book that you are going to use for the demonstration. To choose the book, you need to follow the following procedure exactly:

1. Place all three books, one on top of the other, on a desk or table.
2. Ask the student to pick up two of the books. If the student leaves the class textbook on the table, pick up the book, hold it over your head and say, "She has chosen to use the textbook for the class."

3. If the class textbook is one of the two books that the student has in her hands you say, “Ok, now hand me one of the books.”
4. If the student hands you the class textbook, hold the book over you head and say, “She has chosen to use the textbook for the class.”
5. If the student keeps the class textbook you point to her and say “she has chosen to use the textbook for the class.”

Following this procedure will guarantee that you are using the class textbook. But the student and the rest of the class will swear that she choose the book at random.

Once you have chosen the books, you can now create random numbers to help you find the words. Remind the class that you have asked some of them on the far right side of the room to write down random 5-digit numbers. Then say that you want a couple of students on the far left side of the room with calculators to add up the numbers. (Always use two students so that they can check each other. Let them look at the numbers on the steno pad but do not let them touch the pad itself. Tell them that not touching the pad is a control for this experiment. They will believe you.) When the students add up the numbers, they will have a six-digit number. Tell one of the students to read the number out loud so that you can write it on the board. You will use this number to find a word in each of the books. The first three digits will tell you the page number (2 digits) and the word (1 digit) in the textbook, and the second three the same for the dictionary.

Now comes the trick. Before class is the time consuming part, and it will take you at least an hour. So give yourself some time, and sit down with your class textbook and the dictionary that you want to use for the trick. (This is a good chore for your TA.) You have to identify potential candidates for the trick. You must look at every page between 1 and 99 in the textbook and identify every word that begins with the letter “a” that occurs within the first 9 words at the top of the page. If, for example, the word “among” appears as the third word on page 47, just write down "among" and "47," and continue your search. It is likely that you will find several words that are potential candidates in the first 99 pages. After you have searched your textbook, you now need to see if any of the words you have found have a match in the dictionary. To see if you have a match, you just look up the textbook words in the dictionary. If the word is one of the first 9 words (the bold face words that are defined in the dictionary) on a particular page in the dictionary, then you can use it for the trick. If not, you just discard it. After searching your textbook and the dictionary, you should have at least one match, and hopefully several matches.

Now you need to choose one of the words that matches in the book and the dictionary. (It is always best to choose the most uncommon word--e.g., the word “among” is better than the word “and.”) For demonstration purposes, suppose that the word "among" is the 3rd word on page 67 in the textbook and the word "among" is the 7th entry word on page 54 in the dictionary. Therefore, you must generate the number 473547. This number represents page 47, word 3, in the textbook and page 54, word 7, in the dictionary. Obviously, the six 5-digit numbers that you had your students write on the steno pad will never add to 473547. Therefore, you have to figure out for yourself what six 5-digit numbers do add to 473547. To do this, just get out your calculator, enter 473547, and start subtracting random 5-digit numbers. Each time you enter a 5-digit number in your calculator write it down, and eventually you will have six 5-digit numbers that add to the number that is required for the trick. (This might take you a few tries, and if the page in the textbook is greater than page 50 you might need more than six 5-digit numbers.) The six 5-digit numbers below add to 473547:

- 56489
- 69821
- 99897
- 90452
- 78965
- 77923

All you have to do now is to have six of your colleagues write down these numbers on a page on the steno pad, so that it looks like different people wrote the numbers. When you ask your students to write their numbers, make sure it is on a blank page opposite to the numbers that you have written. Then when you move to the other side of the room to have the students add the numbers, you just turn over the steno pad to your colleagues' numbers and the students will add the prewritten numbers, rather than the students' numbers. The trick works every time. To finish the trick, have one classroom volunteer come up to the front of the room and find the word in the dictionary, and have everyone in the class who has a copy of the textbook find the word in the textbook. Finally, have the student with the dictionary say the word out loud. When they say the word "among," every student in the classroom will be astounded.

Clinton proposes targeting scams

LAWRENCE L. KNUTSON
ASSOCIATED PRESS

WASHINGTON — The greatest threat older Americans now face is not a gun-wielding thug but “a telemarketer armed with a deceptive rap,” President Clinton said Saturday. He proposed legislation to shut down telephone scams aimed at the elderly.

The president said also that while the sharply falling crime rate is a godsend to older people who once fearfully locked themselves into their homes, new protection is needed for nursing home residents who “cannot lock the door against abuse and neglect by the people paid to care for them.”

Clinton used his weekly radio address to promote the crime bill he will send to Congress next month. He said it will impose “tough measures to target people who prey on elderly Americans.”

The proposal also aims at those who defraud health care plans or steal from pensions and retirement funds.

Precognition: Newspaper Article Trick

In this trick, you use "precognition" or "psychokinesis" to predict exactly which line in a very long newspaper article a student will randomly choose by cutting the clipping in half with a pair of scissors.

Look at the articles on either side of this text. They appear identical. As you can see, the article to the left is an AP article taken from the newspaper detailing one of President Clinton's latest attempts at creating a legacy. (I have only included part of the article to save space.) There are thirty lines of text showing. (The entire article had about 60 lines.) If I ask you to pick a particular line at random, I would have only a 1 in 30 chance of predicting which line you would choose.

The trick involves modifying the article on the left by carefully changing lines in the first paragraph. Before class, I cut out the line that says: rap," President Clinton

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Next, I turned the bottom portion of the cut article upside down and taped the bottom line under the last line of the top portion of the article. Take a look at the article on the right to see how this was done. With just a quick glance, especially from a few meters away, it is impossible to tell the left and right articles apart. But on close inspection, they are very different. Later, when the student cuts the article in half and picks up the bottom portion, he/she will naturally start to read it right side up. The line that now appears on the top of the cut portion of the article ("rap" President Clinton said") was actually the bottom line of the article the student cut.

Another thing you need to do before class is to write the line that the student will read on a slip of paper and put it in a sealed envelope. (The trick is more dramatic if, when no one is in the classroom, you tape the envelope to the bottom of one of the chairs before class.)

The in-class demonstration begins when you hold up the newspaper article and ask for a volunteer to cut the article with the scissors. When the volunteer gets up to the front of the classroom, be careful not to let him get a good look at the article. Give the volunteer the scissors and ask him to close his eyes and cut through the article, causing the bottom half to fall to the floor. Ask him to pick up the cut piece from the floor and write the top line on the board. Once this is written, have the student who is sitting in the chair with the envelope taped to the bottom reach under the chair, pull out the envelope, and read the same thing that is written on the board.

This trick is very easy to do and it only requires scissors, tape and a newspaper article.

Psychokinesis: Watch Trick

This is a trick that I learned by attending a lecture given by James "The Amazing" Randi. Randi is a magician who has made it his life's work to expose psychic fraud. Often "psychics" claim to have psychokinetic powers, to be able to affect physical objects with their minds. One trick that is often done is to change the time on the face of a watch using only their minds. It is easy to do a similar trick in front of your class.

Ask if one of your students will loan you a watch for a demonstration of psychokinesis. (This trick only works on an analog watch, one with a minute hand and a second hand. No digital watches. Men's watches are larger and they are easier to work with.) Ask the student to take off his watch and hand it to you. Take the watch in your right hand with the stem facing to your right. Place your thumb on the face of the watch and all your other fingers under the watch. While holding the watch in one hand, slide your middle finger back until your fingernail is under the stem of the watch and pull out the stem all the way. (This takes a little bit of practice, but in no time you should be able to do this with one hand without anyone noticing what you have done.) With the stem pulled out, walk around the room showing people what time it is on the watch. Show several people so that they can all verify the time. Next, ask the person who volunteered the watch to hold out a hand. Place the watch face down on his hand. (Make sure you never let go of the watch until the end of the trick. Keep your hand on top of the watch while it is in the student's hand.) While the watch is upside-down, ask the rest of the class to help change the time on the watch by concentrating as hard as they can on moving the minute and hour hands with their minds. Let them do this for a few seconds, then lift the watch, look at it and place it back down. Tell them that they will have to concentrate much harder if they want this to work.

As you were walking around and talking to the students, what you were actually doing was running one of your fingers over the pulled-out stem of the watch. Doing this rotates the stem several revolutions and changes the time by several minutes, and maybe several hours.

You only have to push in the stem to finish the trick. Remember that often, when you push the stem back in, there will be an audible click. To mask the click, just cough slightly when you push in the stem. Finally, hold up the watch and show the class that they were able to use psychokinesis to move the hands of the watch.

Psychokinesis: Bending Spoon Trick

Another favorite of so-called "psychics" is to take an apparently good metal spoon and bend it with the mind. (This is another trick I learned from watching Randi.) The secret to this trick is to prepare the spoon before class. First, find a cheap metal spoon, the kind that you find in college dining halls. (I buy mine at garage sales, but dining hall spoons will do in a pinch.) To prepare the spoon, you must bend it over and over again until you fatigue the metal *almost* to the breaking point. (This may take several minutes. Be careful when bending the spoon. Repeated bending can cause the spoon to heat up and even burn your fingers.) Try to bend the spoon near where the bowl of the spoon meets the handle. If you bend the spoon too much, it will break, and if you do not bend it enough, the trick will not work. You might have to try this on several spoons before you have the knack of fatiguing the spoon just enough to do the trick. Once the spoon is ready, put it in your pocket and head for class.

In class, tell your students that you are going to use psychokinesis to bend a spoon with your mind. Take out the spoon and just to show them that it is a real metal spoon, take it by the handle and hit the spoon on your desk, or your podium. You can hit the spoon without breaking it if you lightly hit the *side* of the bowl on the table. Because the spoon is fatigued in the up and down direction, hitting the side of the bowl should not cause the spoon to bend or break. (Make sure you test this out before class.) Next, grab the spoon with your thumb and forefinger right over the fatigued part of the spoon and ask for two volunteers. Hold the spoon up in front of you and ask each of the volunteers to grab one end of the spoon, with one grabbing the bowl and the other grabbing the end of the handle. Now that three of you are holding the spoon, tell the class that you are going to use your considerable mental powers to bend the spoon. As you talk about your psychic powers, move the spoon up and down, ever so slightly. If you do this correctly, no one will notice that you are doing anything, including your two helpers who are holding the spoon. After a few seconds or a few minutes of talking, you will have actually bent the spoon into two different parts, but no one will know that the spoon is separated because you will still be holding it together with your thumb and forefinger. At this point, ask the student helpers to let go of the spoon, and you can say something profound and "psychic" sounding as you let the two halves of the spoon slowly drop as everyone sees that there are two separate pieces of one spoon.

Perception

Gestalt Laws: Sponge Balls

There are several Gestalt laws of perceptual organization that can be illustrated by simple magic tricks. Close-up magic takes advantage of several Gestalt laws to force people to look in the wrong direction and see what is not there.

Sponge balls are small foam rubber balls, usually red, that are made to appear and disappear as if by magic. (You can purchase sponge balls at any magic shop.) The tricks are simple to describe, but actually close-up magic is the most difficult to pull off in front of a class.

For example, let's suppose that you start with a small red sponge ball in your right hand. You show the ball to the class and you let them watch as you place the ball into your left hand. You then close the left hand over the ball. Next, you blow on your closed left hand and when you open it, it is empty. Well, the ball must still be in your right hand, but when you open your right hand there are two balls. Then you put the two balls into your left hand, but when you open the left hand there are three balls rather than two, and the act goes on.

You actually start with two balls in your right hand, but you keep one hidden. Then you pretend to place the ball in your left hand, and when you show your right hand there are two balls. While everyone is looking at your right hand and the two balls, you are reaching in your pocket with your left hand and pulling out another sponge ball. When you place the two sponge balls that are in your right hand into your left hand, you now have three balls in your left hand.

There are several different Gestalt laws that are applicable here: proximity, continuity, closure, and contiguity. Just ask your class to come up with the law and an example of how it applied in the magic act.

Learning

Classical Conditioning Demonstration: Balloon trick

In 1987 (can it be that long ago?) I published an article in *Teaching of Psychology* that described how to use balloons to demonstrate classical conditioning. [Vernoy, M.W. (1987). Demonstrating classical conditioning in introductory psychology: Needles do not always make balloons pop! *Teaching of Psychology*, 14, 176-177.] I have attached that article to the back of this paper, but very simply, this magic trick involves piercing a balloon with a needle without making the balloon pop. This is a very impressive trick, and it is a nice demonstration of classical conditioning. (It is much easier than teaching your dog to salivate.) There is no reason for me to take up any more space here to describe the demonstration. Read the *TOP* paper.

Memory

Mnemonics

Mnemonic devices are not magic tricks, but some techniques are so amazing they can seem like magic. There is not room here to describe the different memory systems, but it is easy to get information on mnemonics. If you want to have a memory that is as good as a professional magician, go to *Mind Tools* on the World Wide Web. *Mind Tools* can teach you a variety of memory systems, but the most impressive is the Major System [<http://www.psywww.com/mtsite/majorsys.html>]. Using a system like this, you can learn to memorize anything. The best trick of all is, on the first day of class, to have each of your students say their first and last names out loud. After they all have finished, you repeat every person's name without error. A memory system that will allow you to memorize a list of a hundred or more items is difficult to learn, but it can be a really impressive classroom demonstration.

Author Notes:

All the magic tricks described in this talk were developed by others. I really have no clue as to who the actual originators of these tricks were. If you know, please let me know so I can give

them credit. I want to thank two of my Palomar College colleagues Haydn Davis, and Karen Huffman for helping me learn magic. Haydn, for introducing me to the use of magic in the classroom. I learned many of these tricks from him--the backward card trick, the sponge balls, the forced card trick, and how to pierce a balloon without breaking it. Karen showed me how to do the cut article trick. I picked up some of the other tricks from lectures, and some from watching TV. I was the first to use the non-popping balloon demonstration to illustrate classical conditioning, but that demonstration was a combination of a magic trick originally shown to me by Haydn Davis and a classical conditioning demonstration using balloons that Julie Felender, who is now at Fullerton College, did while I was observing her class.