My initial post:
In my opinion, one of the greatest pros of experimental research is that the process of conducting it is well documented. There are very strict guidelines to adhere to when conducting experimentatl research. For example, the groups must be selected randomly, you must ne researching cause-and-effect relationships, and you need a dependent variable that is measurable. Once you've met all of the guidelines, there are very well defined methods and procedures for conducting the research. I suppose this could also be a con because some researchers would prefer more freedom and liberty in their research, and the ability to adapt and react to their findings in a way that experimental research doesn't really allow for. Quasi-experimental research has similar pros and cons as experimental research as they are both the same, but quasi-experimental research implies that groups are assigned rather than selected.

For single subject designs, the pros include the ability to narrowly focus the research on a single target. This allows a researcher to drill into specific relationships that he/she notices in the subject. Another pro is that researchers can create single-subject research in such a way that it becomes a template for further research. This would mean that a researcher could set up a study of a particular subject and then repeat it with other subjects, adapting for specific instances of course. This allows for data to be collected on a larger scale while maintaining the individuality of the study. I would argue that a con of single-subject design is similar to its pro. It is limiting in that it focuses on one subject. It would depend on the research topic, but I could see a researcher starting out with a single-subject design, but realizing in the middle of the study that maybe there is a larger sample set. The design of single-subject doesn't really allow a pivot like this, and the researcher would need to finish and start again, unless he/she wants to abandon the research at that point altogether and start over.

In my opinion, all three are useful depending on the research topic. However, I think that experimental design is the most useful because of its guidelines. It includes methods to make sure that the results are valid. If a researcher follows all of the steps prescribed for experimental research then it is very difficult to dispute validity.

Response to Joseph Scipione:
You make a great point about the independent variable that can be manipulated. Often I think people think of experimental and quasi-experimental research as a simple if/then situation. By this I mean IF I change this THEN this may/may not happen. But I find that the research I find to be most interesting is when that independent variable is continuously manipulated until several outcomes are found and evaluated. For example, I love Payson's point about the behavior experiments. This is a classic case of informal experimental research. You have the same group of students, and over the course of a school year you can change the variable over an over again until you hit the sweet spot. I think what makes this research in particular effective, is that a teacher can apply the findings from one year to the next and see what sort of variables exist in

the class demographics that affect the independent variable. For example, if you find a solution that works for one class of students where there may be an equal number of boys and girls. But, will that work when the boys far outnumber the girls? If not, why? And can you find another variable to tweak to make it impervious to the demographics of the class? I think that as we approach more and more data-based decisions this sort of research will be key. I don't think there is a one size fits all solution to education, but I do think that there may be a collection of great strategies to control external factors like behavior, motivation, or attention span so that the path to effective learning can be paved much more easily. Now if only there were a way to collect this data on a large scale across the country from all kinds of educators, THAT would be cool!

Response to Lauren Jacobs:

Lauren,

I love that you added that part about your preference for single-subject research as a special education teacher. While in my other post as a response to Joseph I sort of said something different, I think Special Ed is an area of education that is heading down a failing path. I think the idea of inclusion implies that all students are the same, and learn the same way, regardless of disabilities. Or, at the very least that we can do slight tweaking in the classroom to help everyone learn. In reality, what this does is dump the burden on the teacher who now has to spend hours differentiating his/her lessons for almost an infinite number of levels. What single-subject research allows for is solutions that apply based on individual situations. Yes, it can be more costly to a district, or more time consuming for a Special Ed department, but in the end, isn't it more effective for the student? If it's more effective for the student, wouldn't it be worthwhile to develop strategies or even methods of evaluating students' learning strengths and weaknesses? Similar to my other post, if we start doing research on individuals who learn differently and the way they learn effectively, then find the effective strategies for teaching those students we can come up with a collective database of teaching strategies for particular learners.

A little off topic here, but stay with me for just a moment. There is a GREAT TED talk by Malcolm Gladwell (http://www.ted.com/talks/malcolm_gladwell_on_spaghetti_sauce.html) where he talks about this researcher, Dr. Howard Moskowitz, who discovered that spaghetti sauce eaters liked chunky spaghetti sauce. He did this by studying thousands of people. He went around the country having people try many different kinds of spaghetti sauce. When he finished and plotted the thousands of points on a graph there was no obvious winner. The data looked very scattered. (As it would if you went around the country assessing students' learning styles) But, he kept looking at the data and realized that there were three distinct groups. As Malcolm Gladwell says, (around 7:42) "And sure enough, if you sit down, and you analyze all this data on spaghetti sauce, you realize that all Americans fall into one of three groups. There are people who like their spaghetti sauce plain; there are people who like their spaghetti sauce spicy; and there are people who like it extra chunky." Before this, everyone in charge at spaghetti sauce manufacturers thought there was one kind of spaghetti sauce, authentic Italian sauce. What Moskowitz discovered was that the majority of people in the U.S. actually didn't like authentic Italian sauce. In fact 66% of them didn't.

So, how does this apply to education? Well, education reformers say, (and for now I agree) that all students learn differently. The current system is more or less a one size fits all system. There

is differentiated instruction, but that's not effective on a large scale. There are different levels of classes, but with college admissions getting more and more competitive, students are consistently misplaced. What if we did a study on students' learning styles. What if we found out how students learned. What teaching strategies were effective for students all over the country. From the flipped classroom, to inclusion, to lectures, to PBL, and others, go all over the country like Moskowitz did, and finding what styles students preferred. Then, plot them. Are there trends, are there clusters, are there patterns? If so, how do we tailor to that?

The point is, right now, we have no data to go on. We are blindly trying new things and not really effectively tracking the results. And certainly not sharing the results with the rest of the education community very well. The data we do have we are looking at, but can't find any patterns or clusters. But nor could Moskowitz at first. What we do with the findings is another story, but if someone starts collecting this data, I'm sure others will start coming up with ways to change education based on the findings. After all, no one could have imagined that chunky spaghetti sauce would appeal to anyone. But it took one guy a lot of hard work and dedication to figure it out, and now that he has, no one knows how the world worked without it.