

Unforgettable Instruction: Designing Learning Experiences that Stick

Eric Frierson, University of Texas at Arlington

Isn't it great when you have an "awesome" library session? Students are responding to your questions, actively participating and seem to understand the concepts you're trying to teach. It's a very satisfying feeling.

Isn't it frustrating, then, when those same students show up in your office or at the reference desk later in the week having forgotten everything that you went over? Prominent educational psychologist David Ausubel explains this phenomenon in his theories on the way people take in and organize new information using their prior knowledge¹. Knowledge of these theories can help you develop learning experiences that are memorable for your students because they extend the mental models students already have. These experiences empower students to develop authentic thinking skills rather than having them memorize a series of steps and clicks.

Mapping the Brain

Imagine a concept map: several circles connected to one another using lines. The circles represent concepts or ideas, and the lines represent some kind of relationship between them². Ausubel argues that the mind is structured like this: every concept is connected to other concepts.

Because of this, we remember things quickly when they are well connected in our mind. For example, what comes to mind when you see these three letters?

JFK

For many of you, images of former president John F. Kennedy come to mind. From there, what other concepts do you recall? Many of you may be thinking: Camelot, Jackie O., Lee Harvey Oswald, conspiracy theories, the book depository from where he was shot, or the famous film footage of the assassination. Our ability to recall is directly linked to how well that concept is connected with other concepts in our minds.

Introducing New Concepts

Understanding this notion of connections is crucial to designing learning experiences that stick. Because we're regularly introducing new concepts to students, we have

to find ways to connect the concepts we're teaching to their current knowledge and how it is organized.

Try this. Look at the next line of text for seven seconds, then cover it up and try to recall it.

X 5 ~j 87 4 p @ F3

How did you do? How do you think you'd do if someone asked you to recall this text tomorrow afternoon without having a chance to review it? Probably, you'd do quite poorly.

Why? Did you visualize anything when looking at this line of text?

That series of symbols, numbers, and letters don't have any apparent relationship to one another, nor do they mean anything to you. Now try this next line of text; look at it for seven seconds, then cover it up and try to recall it.

Author. Title of the article. (Year). *Title of the Journal*, Volume(Issue), pages.

Could you recall it? Did you even remember which words were capitalized, where the spacing was, and any special formatting on the text? More importantly, if I asked you to re-write this line tomorrow, how well do you think you would do?

My guess is that most of the readers of LOEX Quarterly would be able to do the second activity much better than the first. Even if you're not an APA style expert (the second line of text is a variation on the way APA references a journal article), you will probably at least be able to remember parts of this text tomorrow, if not the exact order and formatting of it.

Why?

Chances are, whether you consciously thought about it or not, images of journal articles or of bibliographies

came to mind. Maybe you thought logically about how to access articles using this information, or an experience with a student with an absolutely atrocious (or pristine) APA 'Works Cited' page. Because you had plenty of prior knowledge to attach these words to, they had meaning for you.

The Learning Cycle

So, since we've seen how students learn best, is it really any surprise that they might forget much of what they've learned in a library session that doesn't explicitly connect to their current knowledge? What do students already know, and how can we connect this new knowledge in meaningful ways?

The Learning Cycle³, a structure for planning and running classroom experiences, incorporates Ausubel's theory into teaching in a practical way. Every lesson begins with an experience – either physical or logical – that forces students to make sense of a situation using their own words and prior knowledge.

For example, when teaching students how to search effectively, try starting out with the ESP Game⁴. In the ESP Game, you are shown an image with a list of 'taboo' words. Your job is to type in words to describe the picture on the screen without using the 'taboo' words. Meanwhile, an unseen Internet partner is doing the same thing with the same picture. When you both type in the same word, you get points and move on. (You may have played a version of this in the Board game "Taboo" with some friends. Don't worry, it's still fun – even in the context of a library session.)

In my classes, I have students shout out words for me to type. Inevitably, we'll get stuck on a picture – they'll be calling out word after word, but we'll be unable to move forward because we can't figure out what our partner is typing and match his description before he indicates he wants to 'pass' on the picture. This is a frustrating experience for students!

At the end of the game, we recap. I ask, "Why weren't we able to move forward?" Students answer in a variety of ways, tapping into their prior knowledge:

- Maybe the other person lives in a different culture and doesn't use the same words we're using (e.g., lift vs. elevator)

- Maybe they spell things differently (e.g., colour vs. color)
- Maybe they were focusing in on a different part of the image than we were

Then, I ask, "How well do you think we would have done if we only got to type in one word and one word only for each image?" At this point, students acknowledge that it would be almost impossible to score a lot of points in that situation.

Here, I'm getting them to think about the words people use when they're talking about things. They activate their prior knowledge by thinking about what they know about language, cultural differences and spelling. They also activate knowledge related to interpersonal communication and the difficulties people can have talking with one another.

This gives them an anchor to start thinking about the way authors of articles write their papers. What words would a criminologist use to describe teenagers? What words would a doctor use to say 'cancer'? As they activate this prior knowledge, you can then introduce new ideas to connect to it: the search mechanisms of databases. In databases, you often must guess at the words authors are using (at least initially, until you can find good subject headings/descriptors in useful articles) in order to get results.

An Argument for Meaningful Connections

Setting up lessons like these to activate prior knowledge takes time, a luxury we often lack. The ESP Game mentioned above adds at least 10 minutes to any session, but the time is worth it as it makes library concepts like controlled vocabulary and Boolean operators seem like natural solutions to problems the students identify throughout the lesson. If you dive straight into library concepts and terminology without setting up meaningful connections, you're teaching the topic in isolation. When students try to remember those concepts, they won't be able to find their way back through their cognitive connections.

Some final tips:

- Find ways for students to discover and articulate instructional concepts in their own terms before you introduce them and their associated library terminology

ogy – if they can ‘invent’ the concepts themselves using what they already know, they’re constructing connections in their minds

- If students struggle to come up with concepts, use questions to help guide their thinking instead of telling them the answers
- Let them invest time in coming up with concepts themselves; you’re helping them develop problem-solving and thinking abilities, not just a set of technical skills

(Tweet, Tweet...Continued from page 7)

tools. In both of these instances, libraries are operating in a traditional marketing mode by pushing information out to their users.

However, Twitter is not a one-way communication tool. One of its strengths is that it allows you to engage in a conversation with your followers by “tweeting” questions. So, for example you might ask your followers to provide feedback about the types of services and/or instruction opportunities they would like the library to provide.

Engaging with Students

For those teaching classes over the course of a few weeks or a whole semester, Twitter may offer another avenue to connect with your students, many of whom use their cell phones more often than their email accounts. Use Twitter to send short “burst” announcements such as reminders about tests and assignment deadlines. Also, suggest supplemental readings, post relevant news stories, or point students to useful research tools you may not have had time to cover in class.

Consider requiring students to join Twitter, and have them “follow” everyone in the class including you. Engage students in conversations about topics covered in class by “tweeting” questions, and encourage students to tweet their questions as well. Recommend other professionals engaged in the field of study for students to follow.

Endnotes

- 1 Ausubel’s theory is explained in Ausubel, D. P. (1968). *Educational psychology: A cognitive view*. New York: Holt, Rinehart and Winston.
- 2 See <http://tinyurl.com/ylpdt9q> for an example concept map if you’re not familiar with them.
- 3 For more on the benefits of the Learning Cycle model, see Deming, J., & Cracolice, M. (2004). Learning how to think. *Science Teacher*, 71(3), 42-47.
- 4 <http://espgame.org/>

Professional Development

Use Twitter to enhance your own professional growth and development. Identify and follow librarians who are active in the field, as well as organizations that discuss topic of interest to you.

You might also use Twitter to find out what’s happening at conferences you do (or don’t) attend. Some conferences establish their own Twitter accounts and post information that you can follow (e.g., http://twitter.com/offcamp_conf). In addition, some conference attendees “live tweet” the sessions that they attend. Many conferences (or conference attendees) establish a hashtag, which is like a subject heading, to allow Twitter users to label their tweets (e.g., #LOEX2010) for identification through Twitter search. Search using these tags and see what people are responding to, in both a positive or negative way, about the conference.

One thing to keep in mind, however, is the somewhat ephemeral nature of tweets. Although they don’t disappear from a user’s Twitter stream, they do become unsearchable very quickly. According to Twitter’s documentation, the search limit “is currently around 1.5 weeks.” As a result, you really need to think of Twitter as a “current awareness” tool, and not as an information repository.

Great! Is there anything else I should know?

In this article, we’ve only covered the Twitter basics. There are a variety of more advanced features, as well as third party tools, which can be used to help users to get the most out of Twitter. Next issue, we’ll explore the best of those tools.