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Positive Learning in Higher Education--Promoting Pluraliteracies Development

Rich Shavelson[1]

Abstract

Access to information in mass and social media was once thought of as a universal "leveler" for all. Unfortunately learning opportunities have been corrupted by biased, false, deliberately inaccurate, and unverified information. Negative learning (NL) occurs when Internet users are unable to recognize this. Positive learning (PL), the acquisition of new, warranted and morally justified knowledge, is the focus of Positive Learning in the Age of Information (PLATO). PLATO should capitalize on high fidelity simulations to: (a) study NL and PL, (b) teach PL skills, and (c) assess PL skills. A model of teaching and learning developed for "Pluraliteracies" provides a framework for PLATO to develop, teach and assess PL competencies. Two warnings as PLATO progresses: (1) education alone cannot overcome NL opportunities; technologies (e.g., AI) are needed to assist citizens in identifying NL environments; and (2) research must go beyond "person" to "person-in-context" recognizing that environments can foster either NL or PL.

1. Introduction

Information in mass and social media reaches people around the globe. While some believed the Internet would be a universal "leveler" providing users with access to information and learning opportunities, much of what is found is biased, false, deliberately inaccurate, conflicting, unverified, and purposely preselected. Negative learning (NL) occurs, often unintentionally or unconsciously, when Internet users are unable to recognize biased or false information, are misguided by it, and use it as a basis for generating knowledge. In contrast, positive learning (PL), defined as the acquisition of new warranted knowledge that is in line with ethical and moral values, is at the heart of the project, Positive Learning in the Age of Information (PLATO). This paper briefly reviews and uses as a springboard two papers in this volume to reflect on PLATO's research agenda. The first, "Acquisition of Generic Competencies," deals with the use of simulation in teaching and learning. Building on "Acquisition," this paper shows how simulation might impact PLATO's research, teaching and assessment agenda. The second paper, "Positive Learning in Higher Education--Promoting Pluraliteracies Development," presents a Teaching for Learning Model that provides an opportunity to turn the model toward PLATO's research that aims to build new knowledge about NL and PL. The paper concludes with two recommendations for PLATO research that might otherwise be missed.

2. Acquisition of Generic Competencies

"Acquisition" makes a strong argument for using simulation in the field of higher education generally and translation studies specifically to educate professionals. Simulations seem especially useful in this field due to their:

 High fidelity with actual practice (translating actual documents into English),

1 Rich Shavelson is Emeritus Professor, Margaret Jacks Professor of Education, Emeritus. Affiliated Faculty, Stanford Institute for the Environment, Stanford University; Email- richs@stanford.edu

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 Usefulness as an instructional tool where complexity of documents and context can be controlled by moving from substantial simplification to full simulation of actual practice, and
 Usefulness not only for instruction but also for assessment of competence.

Building on "Acquisition" it seems as if PLATO might capitalize on high-fidelity simulations of actual or "criterion" social media/Internet situations to:

- **Research,**
- **Teach, and**
- **Assess.**

More specifically, the paper attempts to show that high-fidelity simulations of actual or "criterion" situations to research, teach, and assess are at the core of research and development in PLATO. Years ago while work was being carried out on the United States' mission to put man on the moon, zero and lunar gravity was simulated as a way of studying the impact of gravity and space suits on astronaut performance (see Shavelson & Seminara, 1968). In carrying out the research two dimensions of simulation were particularly informative when deciding what type of simulation was to be used in which context (Shavelson, 1968):

- **Level of Abstraction**: Low (Concrete) — High (Symbolic or Mathematical)
- **Level of Fidelity**: Low (Unlike Real World) — High (Accurate Portrayal of Real World)

In conducting research into uncharted territory, then, typically simulations low in abstraction and high in fidelity are used. This means that simulations used in these uncharted situations should concretely replicate the real world or criterion situation as closely as possible to the research claims to be made about performance (see Shavelson, 1968).In the case of an extraterrestrial simulation of gravity, three alternatives were used in research and training. Moving from the lowest level of abstraction and highest level of fidelity, these are: (a) parabolic flight, (b) water flotation, and (c) counterbalance (pictured). Parabolic flight only lasted a matter of seconds or minutes. So while strong in verisimilitude, parabolic flight was impractical. Counterbalance was rejected, ultimately, by the astronauts because their movement was limited in by the cumbersome simulation method. In the end, astronauts were trained with water flotation at 0 or space gravity and 1/6 or lunar gravity (e.g., Shavelson, 1968).

In particular, what "Acquisition" argues for is simulation that is concrete and which varies in its level of fidelity. As they point out, initially in teaching, students would work on lower fidelity tasks. They would focus for example on translating documents under "ideal" conditions. As students develop, the bar would be raised. Simulation fidelity would move to high fidelity conditions consistent with the realistic situation: high pressure to perform, limited time, demands for accuracy and so on. That is, a document that has been professionally translated by experts could serve as the simulation task given to students. Students' translations could then be compared to the experts'. The conditions under which the translations were carried out would vary from ideal to realistic as students' competence developed.

Simulation could make a significant contribution to PLATO's goal of studying negative and positive learning. Simulations could serve as experimental tasks, as performance assessments for measuring the outcomes of experiments, and as educational "treatments" for preparing students and citizens more generally for the post-factual age. Just as with Translation Studies and the translation of documents, high fidelity simulations of Internet encounters are part of PLATO's agenda. By building a simulated Internet—a high fidelity, low abstraction "Intranet"—researchers and educators could manipulate the variables of interest from basic research all the way to very applied research. To make this claim concrete, consider Sam Wineburg' work. He and his research team started out by measuring news literacy and quickly expanded to on-line civic reasoning using multiple news sources, especially those readily

available on the Internet and social media. In reviewing the scant literature on the topic, he noted that most research used multiple-choice tests or Likert-type rating scales of civic or media literacy (see Stanford History Education Group (SHEG hereafter), 2016):

"Writing a press release is typically the job of:
a.) A reporter for CNN.com;
b.) A spokesperson for Coca-Cola;
c.) A lawyer for Yahoo!;
d.) A producer for NBC Nightly News;
e.) Don't know"(p. 5).

He concluded: "No doubt it is important to know that corporate spokespeople write press releases. But we're not certain that knowing this tells us what students can do when confronted by a statement issued by, say, Volkswagen in response to its emissions scandal. Instead of proxies, our approach directly measured student capabilities"(p. 7). Wineburg and his team developed performance tasks that were high fidelity, concrete simulations of Internet/social network encounters for middle- and high-school students and college students. He sampled diverse students and colleges. The following five tasks were used with college students (SHEG, 2017, p. 6):

1. *Article Evaluation*: In an open web search, students decide if a website can be trusted.
2. *Research a Claim*: Students search online to verify a claim about a controversial topic.
3. *Website Reliability*: Students determine whether a partisan site is trustworthy.
4. *Social Media Video*: Students watch an online video and identify its strengths and weaknesses.
5. *Claims on Social Media*: Students read a tweet and explain why it might or might not be a useful source of information.

One task exemplified "cloaked" websites. These are websites that abound on the Internet. They are professional-looking with neutral descriptions. However, they advocate, on behalf of their parent organizations while actively concealing their true identities and funding source. Wineburg used an open web search to see if college students confronted with an article from a cloaked sight could determine its source. Students were told to go to an article, "Denmark's Dollar Forty-One Menu," on the website *MinimumWage.com*. The article argues that if the U.S. followed the example of countries like Denmark and raised the minimum wage, food prices in the U.S. would increase and jobs would decrease. The article makes reference to the *New York Times* and the *Columbia Journalism Review* regarding minimum wage policy and employment. *MinimumWage.com* looks profession and contains "Research" and "Media" pages ; the website's "About" page says that it is a "non-profit research organization dedicated to studying public policy issues surrounding employment growth."

In the assessment students are asked to determine whether "Denmark's Dollar Forty-OneMenu" is a reliable information source. Successful students will discover that, despite its appearance, *MinimumWage.com* is managed by lobbyists for the food and beverage industry. Its parent organization, the Employment Policies Institute, is a front for Berman and Company, a lobbying firm. According to the *New York Times*, Richard Berman creates "official-sounding nonprofit groups" to disseminate information on behalf of corporate clients.
College students struggled mostly unsuccessfully when faced with a site that deviously conceals its sponsors. Far too many accepted the website at face value. Of 58 undergraduates only 4 found the Berman source. Over 80 percent gave naive responses; easy dupes of the Internet. Some of these students pointed to the "About" page that vouched for the site's trustworthyness; others noted links to the *New York Times* as credible sources, and others noted the article was biased against the minimum wage. Wineburg (SHEG, 2016) summarized his findings on college

students' Internet savvy in one word: *bleak.* He went on to say that our "digital natives" may be able to flit between Facebook and Twitter while simultaneously uploading a selfie to Instagram and texting a friend. But when it comes to evaluating information that flows through social media channels, they are easily duped. Wineburg and his team did not design their exercises to make fine distinctions among answers. Rather they sought to establish a reasonable performance level of they hoped was within most middle school, high school and college students' reach. And they hoped college students, who spend hours each day online, would ask who is behind a site that presents one side of a contentious issue. In every case and at every level, they said that they were taken aback by students' lack of preparation. Ordinary citizens once relied on publishers, editors, and subject matter experts to vet the information they consumed. But on the unregulated Internet, this isn't the case.

3. Promoting Pluraliteracies Development: Positive learning

"Deeper Learning" provides an important framework not only for teaching and learning languages, disciplines and cultures in German higher education but also for most professions. In the professions, the knowledge base is often multidisciplinary and this knowledge must be put into action where it has interpersonal, social, moral impact or some combination of them. Indeed, Derek Bok, former Harvard University president, and Stanford undergrad, was concerned that Harvard's medical training was too narrow. He believed that the everyday problems patients presented physicians with went beyond what Harvard medical students learned in school. He went so far as to recommend the use of the Collegiate Learning Assessment—a high-fidelity simulation in the form of performance tasks—to index students' capacity to think critically, solve problems, and communicate about everyday events (personal communication; see Shavelson 2010). The four facets of the Teaching for Learning model (see Figure 1) contribute importantly to our thinking about what teaching and learning in higher education might look like in the 21st century and what can be done about it.

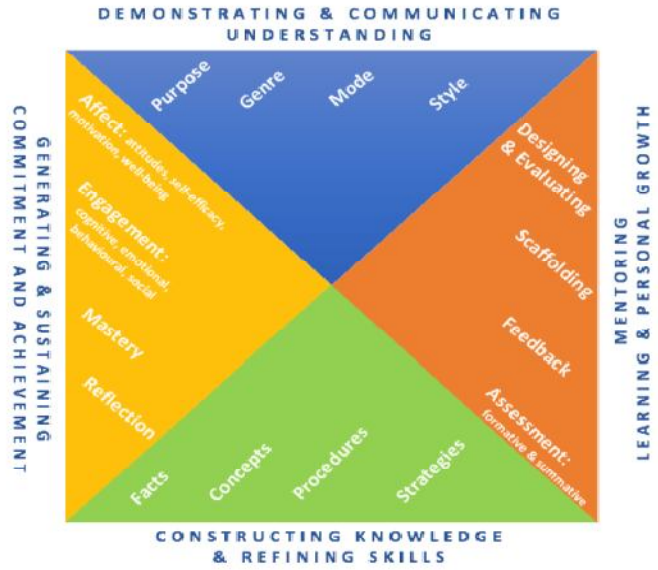

Figure 1: Revised Model of Pluriliteracies Teaching for Learning (Banerjee & Meyer, this volume).

The authors of "Deeper Learning" might consider two possible additions to the model. This suggestion is made somewhat reluctantly because the model is already complex. However, the additions might be important enough to warrant the added complexity. First of all, every time we act individually, socially, environmentally, etc., that act involves knowledge,

motivation, communication and learning, as the model shows (Figure 1). But action also carries with it a moral component: "Should I do this?", "In what way does it affect other people?", "How does it affect the environment?", "How does it affect me?" Indeed, this moral component of action is the focus of one of the four areas of research envisioned for PLATO. So the Teaching for Learning model might consider a moral facet in addition. People's beliefs, attitudes and prior knowledge impact how and what is learned and consequently impacts people's actions. Prior beliefs act as a filter for new learning. What appears to be a clear statement is interpreted through belief, attitude and prior knowledge filters leading to different interpretations of that statement. We know that very young children begin to develop beliefs about the world and people around them through their parents' behavior and teaching (Bloom & Weisberg, 2007). For example, parents' religious beliefs are transmitted to children such that they impact on how students interpret what they are learning. Several studies in the U.S. have shown that while college students succeed in passing a course on evolution, including at Stanford, many who believed in divine creation or intelligent design held onto those beliefs, handed down by their parents and churches, after completing the course (e.g., Barnes & Brownell, 2016; Hokayem & Boujaoude, 2008). It seems that given the strength and impact of beliefs and prior learning on subsequent learning, the model might incorporate a facet along these lines.

Deep Learning leads to the question: "What does the Deep Learning model of teaching for learning tell us about one of PLATO's concerns?":

"When Internet users are unable to recognize biased or false information, are misguided by it, and use it as a basis to generate knowledge, *negative learning (NL)* occurs. In the digital age, individual beliefs or prejudices become more important than objective knowledge, as most Internet users struggle to filter and process vast amounts of information and rely on the first few hits in an online search. NL is difficult to avoid because it often is unintentional and unconscious." (see Zlatkin-Troitschanskaia et al., 2017). The model suggests hypotheses for intervention by educating citizens—students and adults alike—about *constructing knowledge* from the Internet and *refining skills* in judging the truth value of assertions they encounter. The facts, concepts, procedures and strategies aren't those of a particular discipline or profession but need to be developed by PLATO to provide the basis for enhancing the capacity of citizens to learn from the various media sources in an era of (mis)information. Perhaps in *demonstrating and communicating understanding*, the model suggests that we become informed of the purpose, genre, mode and style of Internet and social media communications.

Moreover it suggests that a concerted effort needs to be made in *mentoring learning and personal growth* by what Anders Erickson calls deliberative practice—a practice with clear goals, feedback on how to improve and a constant raising of the bar for performance leading to expertise (e.g., Erickson, Krampe, & Tesch-Romer, 1993). Does this sound like the Teaching for Learning's facet of assessment, feedback, scaffolding, and designing and evaluating?

And the Teaching for Learning model suggests that *generating and sustaining commitment and achievement* be turned toward understanding how messages are intentionally designed to persuade, play to prior beliefs and biases and attempt to engage viewers emotionally and rapidly so as to reduce time and mental effort for reflection. Moreover, the model's focus on cognition, affect and especially *action* is consistent with views of the use of simulation as a critical instructional device to move from negative to positive learning simulations, and then, could contribute to PLATO's research. Sam Wineburg and his colleague, Sarah McGrew, studied experts' approach when evaluating online information (McGrew & Wineburg, 2017). The experts were (1) university history professors; (2) online fact checkers who are charged by American news and political fact-checking organizations with evaluating claims, sources, and evidence; and (3) Stanford undergraduates who grew up as "digital natives". One task used in this research is familiar to us now—minimumwage.com. Here are the results consistently

reached with this task: All online fact checkers found the underlying source in a matter of minutes; historians and students took much longer and only very few found the source. McGrew Ortega, Breakstone & Wineburg (2017, pp. 6-7) were interested in what skills or strategies distinguished fact checkers from historians and students; they reported:

 Reading Laterally: Fact checkers opened up new tabs on a horizontal axis to research minimumwage.com before reading the article or settling on a judgment of the site. Faced with a website that masks its mission or funding source, going outside the site helped fact checkers arrive at a better understanding—and ultimately a more informed evaluation (figure below). 80% of students devoted no time to investigating the source behind minimumwage.com until explicitly prompted to do so. History professors acted more like college students than fact checkers.

 Taking Bearing: Rather than clicking randomly, readers actively try to figure out where they have landed, who is behind the information being provided, and what the creators of the information want the user to take from the site. Bearing-less reading refers to almost exclusively focusing on surface aesthetics and the ease of accessing information. Again fact checkers took bearings; most students and history professors did not.

 Site Selection and Verification: Fact checkers systematically choose sites preferring "news sources" or "press reports" and verified sites by cross-checking from other sites. Less so students and historians.

 Footing: Footing is not about possessing technological skill or savvy strategies for evaluating information. Instead, it is about one's sense of self vis-à-vis digital content. It asks: "Do I see myself as someone who can outsmart the Internet?" or "Am I acutely aware that the Internet can outsmart me?".

This research just scratches the surface and suggests a major research agenda. This agenda includes coming to understand the knowledge, skills, and affective characteristics that go into using media to foster positive learning and avoid negative learning. PLATO is positioned to carry forward this and myriad other important studies.

4. Closing Reflections

In pursuing its agenda, PLATO researchers need to be mindful of two points. The first point is that education and educating college students and citizens in a democracy is insufficient. For over 100 years the U.S. included environmental education in the curriculum; today it can be seen what good that has done. We need education to develop in students and citizens the new 21st Century skill of Internet/Social Media savvy. In addition to education, we need to provide technologies to combat negative learning. For example, an Artificial Intelligence sitting on Google delving into the source of internet sites and red flagging questionable sites and providing evidence for the flag. Without such technology, the amount and rapidity of information is overwhelming and thinking fast rather than reflectively thinking slow is a reasonable response to survive information overload.

A second point is that researchers need to be avoided is a narrow focus on "the person"—the student or the citizen—in studying the impact of media on negative and positive learning. It behooves researchers to look beyond the person and beyond educating the person. People live in environments that support and foster either PL or NL. We need to understand the nature of these environments and their impact on thought, feeling and action. This is not about the way news are manipulated but about micro-cultures that exist in neighborhoods, religious groups or in societies that afford fake news that support strongly held if untested or unethical beliefs.

Research needs to focus on person in place, and understand how place influences behavior. Simply put, *context matters* and understanding knowledge, affect and action in context is essential to combating negative learning. It also suggests policy instruments that might lead from NL to PL.

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