

## Models of Mind in YouTube How-to Videos

Teaching, in a word, is inevitably based on notions about the nature of the learner's mind.

~ Jerome Bruner, *The Culture of Education*, p. 46

### **Introduction**

YouTube how-to videos represent a unique window into popular beliefs about teaching and learning. The phenomenon of individuals from all walks of life posting homemade video instruction to whom they assume are their learner/viewers becomes a rich source for inquiry in this regard. Hence, this study set out to assess the beliefs and assumption that underlie the amateur video instructing that has become so widely popular on social media sites such as YouTube. We examine the ways that videographer teachers shape their instruction for their audiences.

Our interest in amateur YouTube videos lies specifically in what non-educator beliefs shape the tens of millions of how-to videos posted on this widely accessed video sharing site. We see this as a unique opportunity to glean what beliefs about teaching and learning are reflected in these homemade productions. Accordingly, our study set out to classify amateur how-to videos using Bruner's theoretical *models of mind*. We are interested in exploring this social networking phenomenon in light of what Bruner terms 'the perennial problem of other minds' when it comes to educational processes and outcomes; that is, how amateur educators perceive their viewer/learners' minds and how they shape their instructional processes accordingly. In short, we examine what assumptions about viewers' minds amateur educator videos suggest.

## **Perspective**

The perspective that shapes this inquiry is at the cross-section of education and social media studies. We explore how educational beliefs, Bruner's models of mind specifically, are enacted in amateur instruction in the ostensibly 'participatory' culture of social media (Jenkins, 2006; van Djick, 2009).

The fact that we instruct one another and that we use language and tools to do so is what distinguishes humans from all other creatures. There is even some speculation as to whether the evolutionary emergence of language itself was at least partially born out of our drive to instruct and be instructed (Harris, 1992; Tomasello, 1999). Notwithstanding the genesis of human instructional practices and the language and tools used to accomplish this, the fact remains that we continue to be highly driven and attuned to engaging others in learning and thinking about the world.

Leading cultural psychologist and educational philosopher Jerome Bruner calls the composite of these beliefs, assumptions and their concomitant practices *folk pedagogies*. He observes that the folk pedagogies of those who teach, specifically a teacher's beliefs about the learner's mind, determine what happens and how in the act of teaching. "Watch any mother, any teacher, even a babysitter with a child and you'll be struck by how much of what they do is steered by notions of what children's minds are like and how to help them learn, even though they may not be able to verbalize their pedagogical principles" (1996:46). Bruner's work illuminates how anyone attempting to teach has set assumptions or lay theories about how learners' minds work and that they base what and how they teach on these assumptions.

As part of the construct of folk pedagogies, Bruner outlined four dominant sets of these assumptions or what he terms *models of mind* which shape the ways that instruction gets

undertaken. When laid out on a continuum whereby the left-most end represents impoverished teaching and learning, and the right-most end represents the most enriched forms of instruction, Bruner's four models of mind would fall into this order: learners as imitators; learners as acquirers of knowledge; learners as thinkers; and learners as users and managers of knowledge.

*Seeing learners as imitators*

When we view learners as imitators of language and behaviors, the dominant form of instruction is correspondingly demonstration. The goal in such teaching is for learners to know how to do something with the end product being "know-how". This view of learners and learning assumes that 1) the learner does not know how to do what we demonstrate; 2) the learner can learn by being shown how to do what we demonstrate; 3) the learner wishes to gain this know-how; and 4) the learner may have previously attempted or is in the process of attempting to do what we demonstrate. Given these assumptions, the method of instruction is to for the teacher to *show* with the role of the learner as imitator.

*Seeing learners as blank slates*

When a learner's mind is considered a *tabula rasa* (a blank slate), the corresponding form of instruction tends to be didactic presentation or telling of propositional knowledge with the end goal of instruction being for learners to retain and apply facts. This model of mind assumes that 1) the learner is ignorant of the facts in question; 2) the learner's mind is a passive place in which this new information can reside; 3) the facts reside in the mind of the teacher, in visuals and/or in documents; and 4) a prerequisite for the transmission of knowledge is some mental ability on the part of the learner. Given this model of mind, telling students information is the preferred mode of instruction.

*Seeing learners as thinkers*

Moving along to the right on the model of mind continuum, the next model, seeing learners as thinkers, begins to acknowledge a more active stance on the part of both learner and instructor and, consequently, a richer experience of education. Acknowledging an active, capable mind and tailoring instruction accordingly ultimately leads to engagement in intersubjective exchanges, exchanges that more closely resemble the way humans felicitously interact with one another with the goal of mutual thinking and shared understanding. This model of mind assumes that learners 1) can and do construct models of the world around them; 2) can share their perspectives with others; 3) have valuable points of view; and 4) can reason and make sense with others. It also takes the epistemological stance that truths are products of evidence, argument and social construction. A corresponding approach to teaching would be collaboration and discussion.

#### *Seeing learners as managers of knowledge*

Bruner proposes that the most enriching model of mind is that of learners as managers and organizers of knowledge. This includes generating and developing new forms of understanding. This ‘pre-Internet’ idea of what constitutes valuable learning is particularly relevant in a digital age. Contemporary learning goals indeed see intelligent management and productive use of the world’s informational resources as primary.

Assumptions about learners are that they are active, agentive and make productive use of new and existing knowledge. Assumptions about knowledge include the fact that all knowledge has a history or histories, that it is can always be critically and creatively revisited and revised, and that learning is foremost about connecting what is known with what is newly generated. Instructional approaches that align with the learner as manager of information model of mind include modeling, guiding, and scaffolding while learners engage in constructive activity.

#### *Social media and learning*

Web 2.0 is a social and collaborative place where teens and adults alike participate in conversation, knowledge acquisition, and sharing. Internet users “can readily access support and expertise, given generously and freely by familiars and unknowns” (Lankshear & Knobel, 2007, p. 5). According to YouTube (n.d.), the most popular video sharing website, it receives over 3 billion hits per day with this number ever expanding. YouTube “provides online access to vast quantities of free public videos on a broad spectrum of topics” (Snelson, 2011, p.160). This broad spectrum reaches across cultures and allows users to learn through the video medium.

Hallmarks of contemporary social media that are often touted as educationally beneficial are the synchronous and asynchronous forms of interactivity possible between the videographer and her viewers. In addition to watching the anchor video, viewers can interact with the videographer/instructor and co-viewers. This features marks social media as distinct from traditional media: “[w]hat is different in the digital era is that users have better access to networked media, enabling them to ‘talk back’ in the same multimodal language that frames cultural products formerly made exclusively in studios” (van Dijck, 2009:43). This capacity for multimodal, instructionally-motivated online conversations has been theorized as potentially extending and enriching instructional opportunities and thus promoting self-direction, exploration and instructionally-motivated multimodal communication (Hemmi, Bayne & Land, 2009; Tolson, 2010). As such, social media can be used in ways that promote social/cultural/instructional participation both on the part of the videographer (the lay instructor) and the viewer (the learner). The evolution of participatory culture in light of social media is a particularly intriguing area of inquiry given lay perceptions of teaching and learning being instantiated and responded to in widely popular for a such as YouTube.

We set out to explore how Bruner's folk pedagogical models of mind are being reflected in amateur instructional videos and whether and how their design aligns with developing notions of participatory culture on the internet. We sought evidence of connectivity between potential for participatory teaching and learning and Bruner's models of mind.

## **Method**

Based on Bruner's notion of folk pedagogy, this study explores what YouTube how-to videos reveal about lay theories of teaching and learning. The following research questions guided our inquiry:

- Based on Bruner's notion of folk pedagogy, what do YouTube how to videos reveal about lay theories of teaching and learning?
- What are the demographic distributions (age and gender) by models of mind?

To begin data collection, we used the keyword "how to" to search for potential videos for the dataset. We only included videos uploaded to YouTube by the start of the study, October 3, 2011, and only one per username. This was done in order to prevent multiple videos by the same instructor. Videos were excluded from the dataset if they were obscene, were a spoof or parody, were based outside of reality (e.g., "How to Zombie-Proof Your Car"), or were professional or commercial. The initial search resulted in 5.3 million hits, but YouTube only provides 50 pages of results per search with the most popular videos appearing first. To access more of YouTube's database of "how to" videos, the search protocol was modified from the key word search "how to" to "how to X," where X was systematically replaced with the letters A through Z. The final dataset was 409 videos, 1.6% of the original search results.

The age range, gender, and model of mind of the instructor were coded for each video. To code the model of mind, Bruner's (1996) models of mind was used as the theoretical basis:

(1) viewers are imitators, (2) viewers are passive recipients of knowledge, or (3) viewers are active thinkers. Videos where the instructor performs a task and viewers are expected to imitate were coded as “Viewers are Imitators.” Videos where the instructor provides information and viewers are expected to apply new knowledge were coded as “Viewers are Passive Recipients of Knowledge.” Videos where the instructor guides thinking and learning and viewers are expected to construct new knowledge were coded as “Viewers are Active Thinkers.” These models of mind are not necessarily identical matches with Bruner’s models of mind, but fit the key characteristics. Although it is possible to have a model of mind which integrates more than one of these models, the videos were coded for the predominant model observed. We found no instances of Bruner’s fourth model of mind, learners as users and managers of knowledge, in our dataset.

In order to ensure consistency in the coding of the videos, all authors reached consensus by rating the first 50 videos together. At that time, the authors agreed upon the attributes in the videos which would constitute a particular model of mind. Four of the authors then split into groups of two and acted as the raters for the remainder of the videos. To ensure reliability in coding, each video was coded by at least one pair using the coding matrix; the pairs remained consistent throughout the coding process. To determine reliability between rater pairs, 5% of the videos were coded by both pairs. The rater pairs were in agreement for 81% of the videos. Specifically, coding was in agreement for model of mind 86%, gender 100%, and age 91%. For any coding which the rater pairs were not in agreement, all raters came to consensus.

In order to characterize the lay theories of teaching and learning descriptive statistics were performed on the reduced dataset. A chi-square test for independence was used to assess whether the instructor’s model of mind was influenced by their age or gender. To run the chi-

square test for independence between gender and model of mind, videos for which the gender of the individual could not be determined were removed due to the infrequency of these categories observed in the data. To determine if dependency in the model was due to the third model of mind (viewers are active thinkers), the third model of mind was removed and the chi-square test was rerun. Another chi-square test for independence between age and model of mind was performed, the third model of mind and instructors over 60 were removed due to insufficient cell counts.

## Results

The predominant models of mind observed in the data were viewers as imitators and viewers as passive recipients of knowledge, representing 96% of the dataset. Fifty-six percent of instructors were male, 36% female, and for 8% gender could not be determined. When we looked at instructors by gender (Figure 1), we saw that male instructors saw viewers as active thinkers more often than would be expected looking at the overall population. A chi-square test indicated that the model of mind of the instructor is dependent of their gender,  $\chi^2(2, N = 380) = 6.70, p = 0.04$ . When the third model of mind was removed, the chi-square test indicated the model of mind of the instructor is independent of their gender,  $\chi^2(1, N = 363) = 1.06, p = 0.30$ , which suggests dependency for gender is influenced by the third model of mind - viewers are active thinkers.



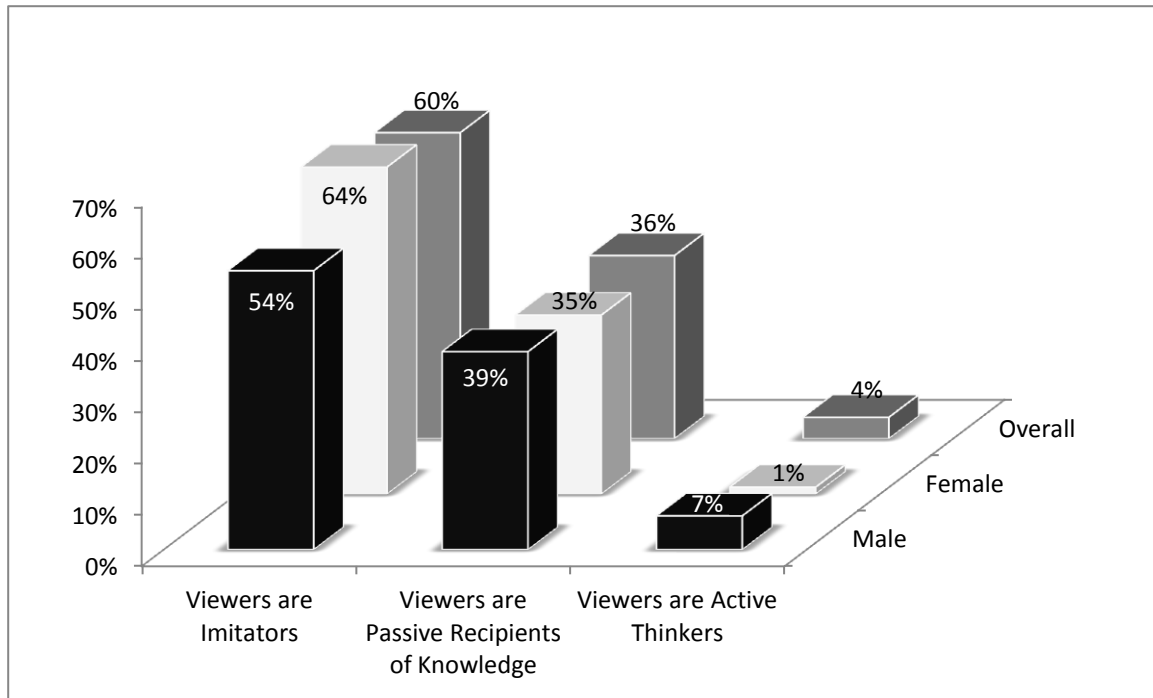


Figure 1. Comparison of Models of Mind by Gender.

Looking at the age of instructors, 7% were 1-20, 44% were 21-40, 15% were 41-60, 2% were 60+, and for 32% the age could not be determined. When we looked at instructors by age (Figure 2), we saw that instructors aged 41-60 saw viewers as imitators less often and viewers as passive recipients of knowledge more often than would be expected looking at the overall population. A chi-square test (with instructors over 60 removed) indicated that the first two models of mind of the instructor are dependent on age,  $\chi^2(3, N = 385) = 15.39, p = 0.0015$ .

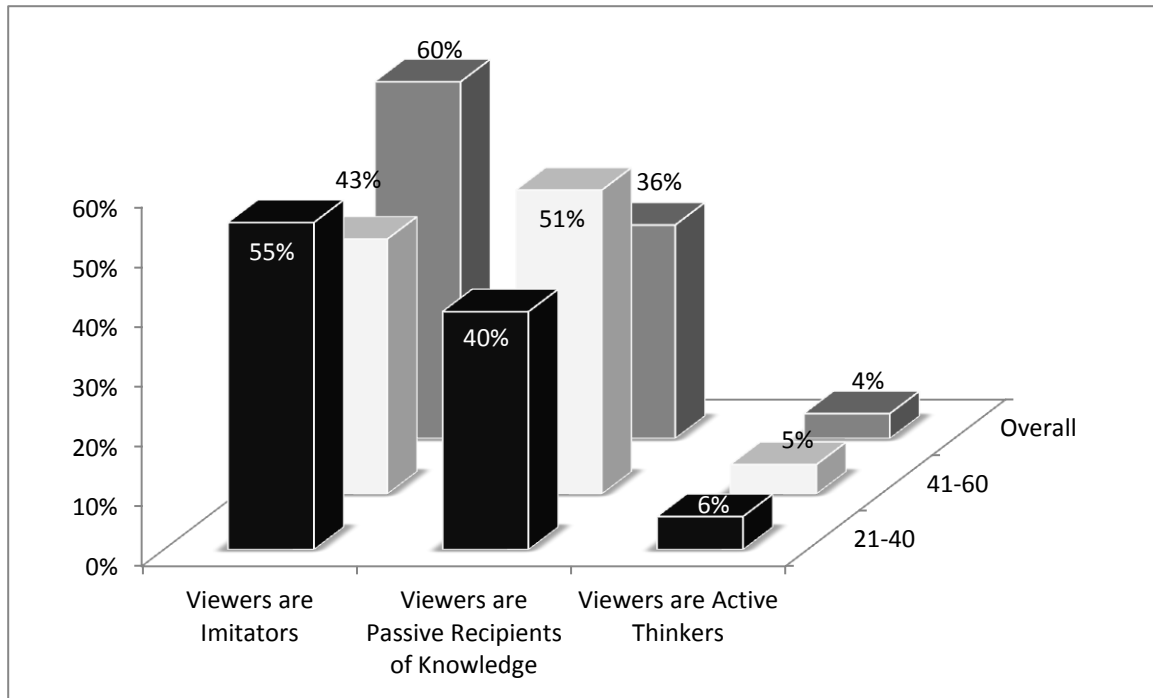


Figure 2. Comparison of Models of Mind by Age.

## Discussion

Our dataset of YouTube lay instruction reveals that the majority of videos appear to be guided by the assumption that viewers are cognitively passive imitators with the second most frequent model of mind being that of learners as passive recipients of knowledge. The videos, especially those developed by younger instructors, may be influenced by the desire to entertain and go viral. Meanwhile the majority of older instructors employed more didactic approaches shaped by beliefs that learners are passive recipients of knowledge. While Bruner readily acknowledges that all four models of mind are valuable when “fused into some congruent unity” (1996, p. 65), he labels the two that predominate our dataset – learners as imitators and learners as recipients of knowledge – *impoverished*, a judgment with which most professional educators might concur.

These data, limited as they are to a subset of the most popularly viewed of the genre, then raise the question of why so few videos represent more enlightened beliefs about teaching and

learning; beliefs that, we should emphasize, are hardly constrained by the medium. YouTube is, after all, an instantiation of social media whereby conversations between instructors and viewers are often touted as not only possible and desirable, but as signaling movement toward participatory educational processes (Duffy, 2006; Rotman and Preece, 2010; Selwyn, 2008). Examples of Bruner's models of mind – learners as thinkers and learners as organizers and synthesizers of information – were indeed realized in videos produced by professional educators, but excluded from this dataset that was limited to amateur instructors.

With the current emphasis on 21<sup>st</sup> century learning goals – goals that particularly align with Bruner's fourth model of mind, learners as managers and synthesizers of information – this popular trend to view other minds in their more simplistic forms by non-educators is noteworthy.

### **Implications**

We began this inquiry theorizing that amateur educator videos posted on social media sites would bring to light assumptions held by lay instructors about their learner/viewers' minds. This modest dataset reveals what models of mind predominate and how across gender and age groups with the majority of the videos posted by young people being guided by the assumption that learner/viewers are imitators. The second most frequent model of mind is learners as passive recipients of information posted most often by older lay instructors with infrequent and no instantiations of Bruner's two more developed models of mind respectively.

#### *The DIY genre*

Many of these amateur teaching videos bear resemblance to the widely popular lifestyle or DIY (do-it-yourself) genre of television and other mediums. This is an age-old genre that is currently manifest as entertainment with learning goals as secondary or even incidental. Videos produced by younger amateurs appear to have been crafted with the particulars of this genre

wielding some influence. By contrast, older videographers took more didactic approaches operating under the learner/viewer as passive recipient of static knowledge model of mind.

*Popular culture trumps formal schooling*

Whether lay educators' beliefs and assumptions were shaped less by prevailing media genres and more by personal educational experiences is left as a question for future research. So too is the question of why so few amateur videos represent more enlightened, contemporary beliefs about teaching and learning, beliefs we should emphasize are not at all limited by the medium. Indeed, examples of seeing learners as thinkers and managers of knowledge were realized in videos produced by professional and commercial educators but excluded from this dataset of lay teaching practices.

With current rhetoric sounding the importance of 21<sup>st</sup> century, global information economy learning goals, the prevalence of these more simplistic conceptualizations and concomitant forms of instruction is disconcerting especially given current exuberance concerning the possibilities for unprecedented learner participation via social media.

Equally, if not more disconcerting to professional educators is the non-influence of advanced pedagogies to which one would hope these amateur educators had been exposed during their tenure in U.S. schools. However, according to Bruner, formal schooling represents a mere fraction of the experiences that shape what we understand about teaching and learning. Popular culture and the folk pedagogies we derive from these appear to trump formal educational experiences. The larger culture and the media with which we interact carry greater weight and influence.

The notion of 'participatory culture' attendant to online social media such as YouTube thus needs to be reconsidered in light of the larger popular, and most often commercially

motivated, culture that tenaciously and, perhaps, unwittingly, shapes what such participation looks like.

*Social media in education: overrated?*

As discussed earlier, in some academic circles social media is touted as a powerful instructional tool. However, where there is much exuberance over the ways it might enhance teaching and learning, these data may dissuade us from attributing too much agency and possibility where none exist; like all tools, social media are merely as additive as the uses to which they are put. YouTube, like other social media sites, is clearly used in ways that do not align with loftier visions of education. Indeed, in the case of amateur instructional videos, they may contribute to perpetuating ways of knowing that are reversing rather than progressing pedagogy as much current rhetoric suggests. These data, taken from the preeminent social media site whereby videographers and their viewers have the possibility of engaging in extended instructional conversations yet choose to use the medium in its most simplistic, traditional manner, amplify this oversimplified characterization of social media when it comes to instruction. This is not a benign trend by any means. Giving a positive nod to social media as evidence of progress in education can indeed backfire when social media uses, like those that predominate in the data discussed here, present educational processes as simplistic and readily accomplished by amateurs.

**Conclusion**

Folk theories shape our everyday practices. In the realm of education, rarely is this more widely and readily evidenced than in amateur internet instruction, a genre that belies popular, prevailing beliefs about teaching and learning among non-educators. Indeed, the folk pedagogies shaping YouTube instructional videos reflect digital natives' ever-expanding cultural toolkits and

the public production of knowledge these imply. That these homemade videos are reflecting impoverished models of education suggests that the increasing production and consumption of YouTube lay instruction is a potential concern for contemporary teacher education and an important direction for future research.

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