The Wisdom of the Ancients:
Storytelling for Educational Video

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Biographical

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Structured Practitioner Notes

Film was initially thought of as having a revolutionary potential to improve education. But so far, that potential has been hardly realized. What has been overlooked is the storytelling aspects of quality education, and the educational potential of storytelling with video. By combining the ancient wisdom on storytelling with contemporary educational theory, video can at last begin to realize its revolutionary potential for improving education.

Abstract

Enlightened education is about starting where students are and taking them to a new level of understanding, which fundamentally parallels the task of storytelling. Because video is the ultimate teller of stories, so should video be a driving engine in enlightened education. Yet, when we consider video and its universal presence in many societies today, our understanding encounters an unfortunate conundrum. At the same time that supporters see video as perhaps the best teller of stories available, critics question the value of this technology, declaring that it constitutes nothing more than a dumbing down of the presentation of human experiences. What these detractors are overlooking is the educational aspects of any good storytelling experience, and the storytelling aspects of any good education. Our purpose here is to address this conundrum and provide a way around it. By turning our view to the wisdom of the ancients, we can take advantage of time-tested and proven techniques of storytelling. In this way, education can make use of video in ways that will surpass the expectations of early pioneers such as Thomas Edison and others, all to the benefit of learners everywhere.

Keywords: instructional design, stories, storytelling, video

> The poet "is not likely to know what is to be done unless he lives in what is not merely the present, but the present moment of the past, unless he is conscious, not of what is dead, but of what is already living" (Eliot, 1982).

The Problem and its Significance

When a new communications technology comes on the scene, two things seem to happen. The new is used pretty much as was the old. In the same way the automobile came on the scene as a horseless carriage, educational video today has made its appearance as a recorded lecture rather than video that is

intrinsically and uniquely educational. The new approach perhaps makes the old delivery format easier to implement or available for use by more people, but it oftentimes does not inherently take sufficient advantage of capabilities of the new technology. Another problem is less common: new features of a new technology become ends in and of themselves rather than actually improving communication. The new and entertaining becomes the focus of the educational video, omitting important and beneficial aspects of the new technology that surpass the old.

A prime example of this problem can be seen in the 2013 movie, *The Lone Ranger.* The movie told a story that had become entertainment legend, a story that morphed through an incredible number of manifestations (radio programs, TV shows, movies, animated cartoons, a comic strip, toys, comic books, novels, and even video games). Despite that history, some of the best minds and personalities in Hollywood could not put together a movie that garnered more than 10% approval ratings by the critics.

The filmmakers could have easily taken the common approach of just using the latest digital technology to tell the old story, trying to make the movie subservient to everything that had been done before. But they didn't want to be that conventional. Instead, they apparently felt compelled to do something strikingly new with the story. Instead of featuring what was alive in the present from the past, they chose to feature currently correct political thinking about the past and to feature the latest techniques of contemporary filmmaking, which yielded such sad outcomes as applying so much makeup to one of the main characters that it hid the expressions on his face.

The purpose of this article to attempt to capture the types of lessons from that type of unfortunate experience and explore how educational videos can benefit from new technologies. In so doing, we will strive to not fall into either of these two common traps--denying what is new to serve the old, or forgetting the old in order to highlight the new. We will explain here how the wisdom of the ages can contribute to the best creation of new media for education now. We will take issue with McLuhan's assertion that "The medium is the message," and show how to move the medium to a cooperative role, one that supports and adds to the message. Stated another way, rather than taking the easy path of simply using new technologies to do the old in a new way or to jazz up the old with something new, we will suggest traditional ways to use new technology for educational outcomes that are likely to be better than would have otherwise been possible.

To do this, we need to first think hard about the fundamentals of what educators have been doing without the technology in order for it to be harnessed to accomplish what we value. In other words, rather than being sidetracked or wowed by the capabilities of the new technology, we need to focus on the core of what we really want to accomplish educationally, as embodied in the answers to the following questions:

1. What fundamentals are in play when education works well?
2. What affordances do new technologies make available?
3. How can these affordances be best applied to solving educational problems?
4. How can the new be integrated with the old to create an improved and meaningful, educational whole?

Our hope is to help bring about what Thomas Edison predicted a hundred years ago (rather naively we might add), when he claimed that motion pictures would soon make textbooks obsolete. That, of course, never happened, but we maintain that video, if grounded in the wisdom of the past, can move education radically towards the sort of revolution that Edison predicted. While it is unlikely that text itself will cease to be used in education, its uses and delivery mechanisms will no doubt be challenged as video use increases.

Oddly, the wisdom of the past to which we refer comes from a time that preceded Edison by a couple of millennia. It was then that ancient masters of narrative raised storytelling to a high art. A contention that we make here is that the principles they developed and followed can be combined with the notion of education as storytelling.

To see how this is possible, we need to first examine the principles of education to see what education has done well. From there we will outline several key strengths of the new technology, which will help us ultimately arrive at the means for fitting these into a framework of a course, either in an actual classroom or in online learning materials and experiences.

Educational Fundamentals

For this radical possibility to become a reality, the first task seems to be to reflect on how education has worked in the past, which will reveal the appropriate practices to be combined with the affordances of video. Given the sheer number of educational theories and practices, often contradictory, that fill the articles and books of the education literature, such reflection seems daunting and is certainly beyond the scope of an article such as this. Nevertheless, to begin somewhere, we chose to seek a recognized source for principles that should guide educational practices.

First Principles of Education

We settled on Merrill's First Principles of Instruction, which as summarized in his book by that title provide an excellent starting point:

> Many current instructional theories and models suggest that the most effective learning products or environments are those that are problem-centered and involve learners in four distinct phases of learning: (1) activation of prior experience, (2) demonstration of skills, (3) application of skills, and (4) integration of these skills into real-world activities. Too much instructional practice concentrates primarily on the demonstration phase and ignores the other phases in this cycle of learning (Merrill, 2012, p. 21).

Looking further into what has worked best in education in the past in putting these principles into practice, we decided that stories provide an excellent means for implementing the first two of the four principles listed above. Not only do stories provide context that is extremely useful in activating prior experience, but the context they provide becomes an excellent vehicle for the demonstration of the skills that learners need to acquire. Finally, as students apply their newly acquired skills, they are able to create their own story as they integrate those skills into real-world activities. We will first provide a rationale that supports this stated importance of stories and then follow that up with a discussion of the principles of why and how video can play a role in the telling of stories that are useful for helping to make learning happen.

The Rationale for Stories for Education

Our recognition of the importance of stories for education is based on two important observations: First, human existence has been forever based on learning. Second, humankind has been telling stories forever as a means of transferring knowledge from one person to another. Furthermore, even the most casual mention of the use of stories for learning will bring approving nods from anyone within earshot. Images immediately come to mind of hunters and gathers sitting around the campfire into the night, recounting their exploits of the day or even of times past. This fascination with stories has continued unabated from that time forward and remains with us today in our media as well as many other aspects of daily life. Whether we consider Norse, Greek, and Roman mythology in Western Europe or the legends of every other culture on the planet, stories are an important part of the development of each civilization and people.

The hierarchy of all six forms of art, as described by Hegel in his *Lectures on Aesthetics*, involves story to varying degrees. From sculpture and architecture we move to other art forms that enable the description of an event with varying levels of fidelity, arriving in the end at drama, which for Hegel was "the highest art form" (Speight, 2001, p. 47). Although the medium of communication might change, stories play a central role in each instance. This observation supports our reflection on what we know about people: As human beings, we love to not only tell stories but we love to be told them as well. As stated by Mary Alice White of Teacher's College at Columbia University, "Our history, as a species, overflows with images we have created to tell a story to be remembered" (White, 1987, p. 43). Her emphasis on the interaction of stories and images raises an important point to be discussed further.

These illustrations from art and even human survival have a lot to do with engagement, but something even more powerful than simple enjoyment is in play here. For starters, there are many connections between stories and the learning process that humans use to relate to the world around them. As Jerome Bruner wrote:

> It is the sense of things often derived from narrative that makes later real-life reference possible...All I want to say for the moment is that narrative, including fictional narrative, gives shape to things in the real world and often bestows on them a title to reality (Bruner, 2003, p. 8).

Taking even further the idea of using connections to shape our understanding of reality, Roger Schank, a cognitive scientist, suggests that we understand the world in terms of stories we have already understood:

> People think in terms of stories. They understand the world in terms of stories that they have already understood. New events or problems are understood by reference to old previously understood stories and explained to others by the use of stories (Schank, 1995, p. 219).

We conclude, therefore, that the best of education can be understood as a type of storytelling. This means that the best of education is not simply conveying information or even making information available using techniques that are entertaining or considered to be active in a hands-on sort of way. Rather, it is showing the clash of ideas that leads to the discovery of truth, a process which is itself a type of storytelling.

The Affordances of New Technologies

So, what is the best way to combine solid educational principles with pedagogically sound materials that implement story-telling techniques? First is the need to recognize the power that materials developers have at their disposal through the use of video technologies. Beginning 25 years ago, the thinker and writer George Gilder provided a vision of the future of visual media (Gilder, 1994). The basic premise of his book, *Life After Television*, was that digital technologies were about to change not only every aspect of the film and video industries, but also the manner in which people consume media.

True to Gilder's vision, new technologies provide tools for production to ordinary individuals that were previously only available to Hollywood studios and other professional video production operations. Today, the high definition video recording and editing capabilities rival professional products from only a few years ago. This is illustrated by the cameras on the typical Apple iPhone, Android device, or Windows Phone, not to mention the dedicated, prosumer recording devices that are available. With respect to video editing, iMovie on Apple's Mac OS X and Movie Maker on Microsoft Windows far surpass what was imaginable even a few years ago. Furthermore, the impressive suite of features available on video editing software such as Adobe Premiere make possible productions that surpass what Hollywood was able to accomplish for almost a hundred years after the inception of motion pictures in the last decade of the 19th century.

Educational Videos: From the Old to the New

Minimal effort at extrapolation is sufficient to realize that many of the benefits of digital technologies predicted by Gilder that are now becoming widely available two and half decades later also now provide incredible capabilities for the production and distribution of educational video. The problem is that precious little is being said and demonstrated about how to create good, (read effective AND engaging) educational videos.

At first glance, video is interesting because it provides a high fidelity representation not only of reality but also of the imagination, a principle that is easily recognized by the old saying, "A picture is worth a thousand words." Although that concept is as valid today as it has ever been, we suggest that it does not go far enough. We suggest that reliance on the timeless principles of story and narrative put forth by Aristotle and others would go along way to addressing problems with the way too many educational videos have been created.

Unfortunately, the use of effective narrative devices for education has not always been front and center in the design of new media for education. In the heyday of educational video, Disney and others created content that followed the model to some extent (Bush, 2015), but so much of what is considered to be educational video today takes the approach of breaking subject matter down into its smallest parts, explaining each of those, and then expecting the learner to understand and remember. Our view is that this approach find its roots in the Cartesian Revolution.

In the second part of his renowned essay on the methods of reasoning (Cottingham, 1985), Descartes articulates the "rules of the method" (p. 111) that he used to make great progress in "seeking truth in the sciences" (p. 111). His first rule was to accept nothing except that which was so clearly true that he could not doubt it. His three other rules amounted to a process that involved:

1. Breaking the problem down into its smallest possible component parts,
2. Solving the resulting sub-problems, then
3. Ascending "little by little, step by step to knowledge of the most complex" (p. 120).

Despite the contribution these principles have made to the scientific method, we suggest that their application to the development of pedagogical materials can be problematic. Although such application might well constitute a prescription for cognitive attractiveness, it can also become a recipe for affective disaster. Stated another way, materials that are cognitively alluring might well also be overwhelmingly boring, an obvious obstacle to learners obtaining adequate practice or time on task.

The importance of practice on tasks gained popular attention through Gladwell's popular book, *Outliers* (2008) that glamorized the effect of practice with his promotion of the 10,000 hour rule (Ericsson, Krampe, & Tesch, 1993). This notion downplays the importance of individual differences in innate ability, an idea with which other researchers take issue. In their extensive meta-analysis of research in the area of practice and performance, Macnamara, Hambrick, and Oswald (2014) concluded that individual differences in practice do not adequately account for individual differences in performance.

Despite this raging controversy in the cognitive sciences, which can be summarized as nature versus nurture, we have to conclude that practice, which can also be described as time on task, contributes to success in any endeavor. With that in mind, we have to conclude that engaging materials will help learners achieve the necessary time on task.

The application of this principle to educational video suggests that productions that engage and are pedagogically sound will be significantly more beneficial than those that reflect only one of these two criteria. Our proposal, however, goes even deeper than is suggested by this rather superficial approach.

We suggest the confluence of three things enable the creation of educational videos that surpass anything that Edison might have imagined.

First, new and affordable digital technologies enable the production of video at a level of high fidelity representation heretofore unimagined. Second, the combination of narrative principles with technologically advanced video makes possible a synergy that goes beyond what we would consider to be cognitively beneficial and affectively pleasing. Indeed, the interaction of cognition and affect serve to take learning outcomes to a new level relative to the time spent in the learning process.

These ideas were not lost on Derek Muller of Veratasium (Veritasium, n.d.) who recognized the challenges with the "show and tell" approach with video for teaching physics. Like others, he recognized the limitations of the early videos produced by Salman Khan that have become staples of the offerings of the Khan Academy. Using those as his starting point, he sought to determine what type of video might work best for teaching science. As part of the research he conducted for his doctoral program, he came to the conclusion that students learn science poorly from videos that simply state the way things are (Muller, 2008), which we suggest reflects conformance to the principles put forth by Descartes. Tests that Muller conducted with viewers demonstrated that the most learning occurs when viewers are able to see their own false views expressed and then have those be shown as false in the light of better views. Muller's physics videos that he distributes on his Veritasium YouTube channel follow this approach and receive millions of views within a matter of weeks. To summarize these findings, we assert that videos that simply state the truth, step by step, like many of the Khan videos on science, might seem easier to understand to viewers, but such videos fail to lead viewers to revise their thinking. It is simply too easy for them to interpret the information they receive as something with which they are already in agreement. The conclusion to be drawn is that it is necessary to challenge the error of the previously held views, then follow up with an illustration of what is correct.

Story-based educational videos

This realization enables us to connect the philosophy of this approach to the value of stories that we discussed above, doing so through a simple parallel that we can draw. At the same time that we recognize that stories are about overcoming conflicts and problems, we also see that educational video is not simply about being told the truth. We suggest that educational video that is engaging as well as pedagogically sound should enable the learner to experience a story of how truth triumphs over falsehood.

Real education, as opposed to rote learning, starts with what students believe already to be true and in some meaningful way builds on that to construct new knowledge. When approached this way, true education becomes the articulation of a story--the resolution of conflicts between what students thought initially and the conclusions to which they can arrive in the end. Aristotle, as an advocate of dialectical discourse, taught that art in general, and storytelling in particular, is education for adults. It doesn't consist of repetitive inculcation of ideas, as it might for young children as in chants and routines, but in adults grappling with diverse viewpoints, including their own mistaken ones.

The most effective way to carry out this process for a student to acquire new knowledge would seem to be for her to articulate what she believes and then to have someone show her there is a better viewpoint. One way this could be done would be to use video to convey a good story that shows a character, with whom the learner can identify, who faces a problem, and then must experience a change in beliefs. The viewer can then identify with that person and then join in the journey of discovery.

With this review of the affordances of educational video, we can now see how the wisdom of the past raises storytelling to a high art and can be combined with the notion of education as storytelling. Doing so will be to take advantage not only of what the new technology can do, but will also build on what education has done well. Combine that with the distribution capabilities of the Internet, which have

continued unabated now for over two decades, and we begin to recognize the potential for new paradigms for learning.

Story-based Videos for Solving Educational Problems

From here we turn to how those stories can best be developed and delivered using video, to ultimately arrive at the means for fitting these into a framework of a course, either in an actual classroom or in online learning materials and experiences. We discuss four types of story-based educational videos.

Narratives

In its simplest form, a narrative, as Aristotle would describe it, is an action pursued by a person with a certain mind set that changes in the end. A plot for a narrative can thus be simply stated as follows: John Doe, who initially is of one mind set, attempts to do something, and in the process adopts another mind set. For such a narrative to be effective, it needs to feature a sympathetic character who starts pursuing some task with a viewpoint, attitude, and skill level much like that of the audience. The character then confronts difficulties and makes adjustments, changing his views and feelings as well as his skill set. In the end, in order to accomplish the task, the character develops significantly. The development of the character is a strong invitation to the audience, who has been rooting for this character, to also learn and change themselves.

Documentaries

While narratives are about non-documented events that are usually fictionalized, documentaries are about real events that can be shown to have occurred. Nevertheless, the story-telling principles of the most effective documentaries are the same as for narratives. Here we follow the journey of an individual or a group, attempting to accomplish a task or solve a problem, and who, in the process, learns something significant. The individual may in some documentaries be the storyteller/filmmaker himself: we may be following her journey and her learning. In the end, the audience is again invited to learn with the individual or group in the story.

How to videos

With stories as their basis, these videos show a character or a filmmaker attempting to accomplish something, making typical mistakes, but learning along the way. Again the audience comes on the journey, seeing truth prevail over falsehood.

Course narratives with a project manager

Courses organized around accomplishing a task, under the supervision of a project manager, can also be seen as stories. They are stories created by trying to accomplish a specific objective, running into problems, having to reexamine previously held views and adopt new principles and strategies. Medical and business classes are often organized this way, with a teacher presenting the students with a problem to solve and providing suggestions when they find themself stuck. These live stories can, of course, be recorded, in writing and in documentary reconstructions, with the record always bringing out the crucial turning points when the participants had to learn something in order to proceed.

Integrating Story Videos into the Educational Process

Conventional settings

There are a number of ways story-based videos can be effectively integrated into the conventional classroom. The most basic approach is to show students in the past learning as they struggle to accomplish something, while engaging the class in an activity or project that seeks to do something similar. They can then present their story from which later students will be able to learn. Watching and annotating the struggles of others and of oneself can be effectively used as well. The task is to mix

vicarious with live learning. But in all cases, the learning isn't about just getting the true answers, but also about overcoming the false ones.

Hybrid settings

From conventional educational settings, we move to hybrid settings that involve online learning, which is often video-based. Unfortunately, the most typical type of video implemented in this setting happens to be recordings of classroom lectures. While students appreciate the ability to watch lectures at 1.5 times to twice the normal speed, it is clear that this approach leaves much to be desired with respect to the innovative use of video for learning. Yet, even this approach fits into the model of disruptive technologies developed by Clayton Christensen of the Harvard Business School. As he has pointed out for many domains, the arrival of a new technology brings capabilities that are either cheaper but inferior to what is currently available or available in circumstances where they previously weren't. With time, however, capabilities increase to the point that the new eventually displaces the old.

In a recent article in the *Harvard Business Review* (Christensen, Raynor, & McDonald, 2015), Christensen and his co-authors ask whether a new technology or business model might exist "that allow entrants in higher education to follow a disruptive path" (p. 52)? Their answer is that online learning seems to be a likely candidate for bringing such disruption to the education sector. We agree and add that a major contributor to such an outcome will be what Salman Khan has called the "flipped classroom," the model in which learners do on their own what they previously did in the classroom. For the quality of that approach to increase as Christensen's Theory of Disruptive Innovation would suggest is possible, however, we suggest that high quality educational video, based on stories, will play a key role.

Conclusion

If (1) enlightened education is about starting where students are and taking them to a new level of understanding, which is fundamentally the task of storytelling, and (2) video is the ultimate teller of stories, then video should be a driving engine in enlightened education. Yet, when we consider television and its universal presence in many societies today, our understanding encounters an unfortunate conundrum. At the same time that supporters see video as the ultimate teller of stories, critics question the value of this technology, declaring that it constitutes nothing more than a dumbing down of the presentation of human experiences. What they are overlooking is the educational aspects of any good storytelling, and the storytelling aspects of any good education.

Our purpose here has been to address this conundrum and provide a glimpse at a way around it. By turning our view to the wisdom of the ancients on storytelling, we can take advantage of time-tested and proven techniques of communication. In this way, education can make use of new media, especially video, in ways that will surpass the expectations of early pioneers such as Thomas Edison and others, all to the benefit of learners everywhere.

References

Bruner, J. S. (2003). *Making Stories: Law Literature, Life*. Cambridge, MA: Harvard University Press.

Bush, M. D. (2013). What MOOCs, flipped classrooms, and OLPC teach us about individualization of learning. *Educational Technology, 53*(6), 60-63.

Bush, M. D. (2015). Lessons from the past for the next generation of educational video. *Educational Technology, 55*(1), 33-38.

Christensen, C. M., Raynor, M., & McDonald, R. (2015). What is disruptive innovation? *Harvard Business Review*, *93*(12), 44–53.

Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review, 100*(3), 363–406. http://doi.org/10.1037/0033-295X.100.3.363

Descartes, R. (1985). Discourse on the method of rightly conducting one's reason and seeking the truth in the sciences. In J. Cottingham, R. Stoothoff, & D. Murdoch (Eds.), *The Philosophical Writings of Descartes* (pp. 109-175). Cambridge: Cambridge University Press.

Gabriel, M. (1999). Learning and growing through stories. *New Horizons for Learning*: Web resource from Johns Hopkins School of Education. Retrieved from http://education.jhu.edu/PD/newhorizons/lifelonglearning/early-childhood/learning-growing/

Gilder, G. (1994). Life After Television: The Coming Transformation of Media and American Life. New York: W.W. Norton & Company.

Gladwell, M. (2008). *Outliers: The story of success*. New York, NY: Little, Brown.

Hegel, G. W. F. (1975). *Aesthetics: Lectures on Fine Art*, trans. T. M. Knox, 2 vols. Oxford: Clarendon Press, 1975.

Macnamara, B. N., Hambrick, D. Z., & Oswald, F. L. (2014). Deliberate Practice and Performance in Music, Games, Sports, Education, and Professions: A Meta-Analysis. *Psychological Science*, *25*(8), 1608–1618. http://doi.org/10.1177/0956797614535810

Merrill, M. D. (2012). *First Principles of Instruction*. Somerset, NJ: John Wiley & Sons. http://site.ebrary.com.erl.lib.byu.edu/lib/byuprovo/reader.action?docID=10612563

Muller, D. A. (2008). Designing Effective Multimedia for Physics Education. Retrieved June 8, 2015 from http://www.physics.usyd.edu.au/super/theses/PhD%28Muller%29.pdf

Schank, R. C. (1995). *Tell Me a Story: Narrative and Intelligence.* Evanston, IL: Northwestern University Press.

Speight, A. (2001). *Hegel, Literature, and the Problem of Agency*. New York: Cambridge University Press.

Veritasium, (n.d.). Retrieved June 8, 2015 from *Wikipedia*: http://en.wikipedia.org/wiki/Veritasium