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TEACHER-READY THEORY REVIEW

The Pedagogical Power of Storytelling

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Stories, as a means of teaching, have been a part of society since the beginning of human communication. The power of storytelling as pedagogy, however, may have been undervalued by educators. In this teacher-ready theory review, we present the connection between teaching and storytelling, highlight a variety of storytelling approaches, summarize why storytelling works as a pedagogical device, and conclude with suggestions and recommendations for implementing storytelling as a pedagogical approach. We present cautions and limitations as well, but we encourage teachers of psychology to consider storytelling as one of their pedagogical tactics to deploy as appropriate to connect with students and work toward desired student learning outcomes.

Keywords: storytelling, pedagogy, teaching, recommendations, limitations

Storytelling is culturally universal—it is likely the oldest form of teaching, allowing generations of humans to share cultural knowledge to be remembered over time. One estimate of the longevity of storytelling ranges back 27,000 years to when cave paintings are estimated to have been created (Widrich, 2012). Most of human knowledge is constructed of past experiences, and new experiences are situated within the context of personal stories and personal relevance (Schank & Abelson, 1995). These researchers continue:

In the end all we have are stories and methods of finding and using those stories. Knowledge, then, is

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experiences and stories. Intelligence is the apt use of experience, and the creation and telling of stories. Memory is memory for stories, and the major processes of memory are the creation, storage, and retrieval of stories. (Schank & Abelson, 1995, p. 8)

Given this perspective, it is clear that storytelling may be considered foundational to the teaching profession (Abrahamson, 2006); however, relatively little attention has been paid to its use as a pedagogical tool in psychology but see Sheafer (2017) and her work on digital storytelling. What remains unclear is how teachers of psychology can best leverage stories to their pedagogical advantage. The Society for the Teaching of Psychology Story Task Force (2014) concluded that storytelling is a unique instructional strategy but that instructors desire more empirical evidence about the effectiveness of this teaching strategy and resources on how to best use it for their purposes (see also Houska et al., 2015). Presenting and updating the available evidence about the power of story is the goal of this teacher-ready theory review. Accordingly, we present the relevant arguments and research about the pedagogical power of storytelling in our discipline. We begin with some background on the unique value stories hold for the human experience. We then present a brief overview of the varied uses of storytelling approaches by faculty members in collegiate classrooms, followed by why storytelling works, and conclude with resources and recommendations for the continued implementation of storytelling pedagogy.

Storytelling in Human Culture and Development

Stories typically recount a sequence of events in which one or more protagonists interact with their world, often confronting and attempting to resolve problems along the way. The human capacity for intersubjectivity allows the audience of a story to build shared meaning even from distal events and others' experiences. In other words, we learn from stories without ever leaving where we are or experiencing the perils and pitfalls that engage the protagonists. According to Bruner (1990, 2002), stories impose structure on our experience and are essential tools of cultural learning and reflection. Stories and their associated narratives provide the means for children to make sense of their world and create their sense of self. "Through narrative," Bruner (2002) writes, "we construct, reconstruct, in some ways reinvent today and tomorrow" (p. 93).

Beyond individual experience, stories have provided the vehicles for cultural transmission of knowledge throughout human history, allowing each generation to build upon the wisdom of the ancestors. Given the thousands of generations that stories have served, human understanding of stories is internalized to the extent that we may not recognize how much we rely on them in our everyday lives or how valuable they can be in teaching contexts.

The Variety of Pedagogical Storytelling Approaches

With regard to teaching, the purpose of stories is to (a) create interest, (b) provide a structure for remembering course material, (c) share information in a familiar and accessible form, and (d) create a more personal student—teacher connection (Green, 2004). In other words, stories help us to learn by making content person-

ally relevant. Because of the universality of storytelling (Willingham, 2009), comprehension of material presented in a narrative structure is easier due to our deeply internalized understanding of how stories are told. Further, by crafting the narrative to make the story interesting, the topic and highlights of the story are easy to remember. A well-told story elicits the phenomenon of narrative transportation, in which the audience has the sense of immersion in the world of the story (Green & Brock, 2000). Many of us have had this experience of being so engrossed in a story that we lose track of time and events in our own world as the world of the story becomes real in our minds. Not surprisingly, researchers suggest that when we extend this power to the classroom, we can effectively support our students' learning and engagement (e.g., Fawcett & Fawcett, 2011; Keehn, 2015; Sheafer, 2017).

Because storytelling has been a teaching strategy available for a long time, empirical data about its effectiveness are available from both laboratory researchers and classroom researchers. For instance, Bower and Clark (1969) reported better memory for words when story organization was used compared to rehearsalbased serial organization. Similarly, Graesser, Hauft-Smith, Cohen, and Pyles (1980) found that narrative presentation leads to the enhanced recall of expository text. In a sensation and perception course, Gunther (2011) reported that when students read popular nonfiction books, there was significantly higher student exam performance compared to course sections using a traditional textbook.

The use of stories as a method of teaching both science and social science concepts has been studied in secondary and postsecondary school environments. Bell (2009) reported on an arts-based storytelling approach used with middle and high school students that focused on racism and social justice topics, Keehn (2015) utilized personal storytelling to promote social justice in two diversity courses, and Mutonyi (2016) examined the effectiveness of stories. proverbs, and anecdotes for high school students' learning of science concepts. Using qualitative methods, Mutonyi concluded that Ugandan students accessed health and HIV-related information through stories, proverbs, and anecdotes communicated through the media more than that communicated through the schoolbased science classroom. These researchers suggest that if we as instructors want to help shape students' habits of mind and search for knowledge, we would do well to tap into the ways they spontaneously approach knowledge through narrative.

With a college sample, Nikitina (2003) reported the challenges faced in having students share their own personal relevant stories in a history of science course. Studying college students with disabilities, Kimball, Moore, Vaccaro, Troiano, and Newman (2016) concluded that storytelling can be an effective means of reducing stigma; Swanson (2016) presented a method to use fictional stories with ethical content to improve students' ethical behavior. Owen and Riley (2012) provided a detailed description of performative storytelling as one method of visual teaching (other methods include modeling reflective practice and learning by doing). Oatley (2008) suggested that (fictional) stories are the "flight simulators" of human minds as we interpret and predict events in the world around us. There are undoubtedly many other possible approaches to the use of storytelling as teaching pedagogy; in fact, there are entire books devoted to the topic of the power of teaching through storytelling (e.g., Brakke & Houska, 2015; Collins & Cooper, 2005).

Why Storytelling Works

Many of the tools for understanding why storytelling works come from our own discipline of psychology. According to Finkel (2000), storytelling works so well as a pedagogical approach due to concreteness, specificity, and narrative organization. In the teaching context, a storyteller can present material as a mystery, and students will be naturally inclined to "figure out" the story, thus engaging in the process of sensemaking. Willingham (2009) described stories as "psychologically privileged" (p. 51), meaning that memory for stories is different from memories for different types of information. Said another way,

Remembering is not merely a function of having a good or bad memory. Someone with a "bad" memory can still remember a memorable story. We remember things that are woven together with a plot, are meaningful to us, have a vivid impact on our mind, or made us feel—good or bad. We remember stories that stir

our emotions. A good story etches an image into your listener's mind by linking your words together into a meaningful whole that is vivid and emotionally stimulating. A counterintuitive secret that all good story-tellers understand is that the more specific the story, the more universal the connections. (Simmons, 2006, pp. 122–123)

In her writing about communicating the science of psychology (whether to students or to the public), Ruscher (2014) emphasized a three-part storytelling approach: meaningfulness, coherence, and memorability. Fortunately, because the subject matter of psychology is often personally relevant, it is not difficult to find topics that connect with the human condition. The practical applications of what psychological science has to offer are wide-ranging.

Cognitive science provides further evidence supporting the status of stories as effective means of sharing information. Indeed, human brains have evolved to process lived experiences sequentially in scripts, much like the narrative of a story (Hazel, 2008). Story gives us a way to organize and make sense of our memories that fits this sequential structure. Like a story, memory is constructed—highlighting some features and having elements of fiction as we assimilate events and maintain narrative coherence within our recollections. Other elements of cognition also facilitate our understanding of stories. Intersubjectivity allows us to understand and empathize with characters and to fill in the unwritten gaps about their perspectives. We engage in active comprehension as we fill in details and update our representation model of the story's context in memory, as well as imagine possible worlds through our capacity for hypothetical thinking (for reviews of the cognitive underpinnings of story comprehension, see Copeland, Larson, & Palena, 2015; Foy, 2015).

At an even more basic level, neuroscience researchers suggest that our brains actually respond to what is happening in a story as if it were a genuine experience. Multiple research teams have discovered that our brains respond to viewing or even reading stories much like they do to real life (AbdulSabur et al., 2014; Baldassano, Hasson, & Norman, 2018; Berns, Blaine, Prietula, & Pye, 2013; Milivojevic, Varadinov, Vicente Grabovetsky, Collin, & Doeller, 2016). Our limbic system, mirror neurons, neurotransmitters, and cortical pathways

are all engaged. Our experience of narrative transportation is tangible; as far as many areas of our brains are concerned, we do indeed enter that other world of the story.

Making the Most of Storytelling Pedagogy

When we use storytelling to communicate, the basic conventions of a story are common across all disciplines. For example, stories typically include a beginning, middle, and end. Depending on the genre, stories may include a conflict that is resolved, an inquiry with a solution, or a mystery to be solved. The story of discovery and invention that characterizes the classic tales of our culture also applies, for example, to the stories of psychological scientists who make discoveries that advance our understanding of human behavior. This storytelling approach can be used as an analog to learning to tell the scientific story of how to conduct research in psychology (Landrum, 2012).

Storytelling is an approach that allows for the purposeful introduction of complexity. Why would that be a desired goal in teaching? Sometimes an unintentional consequence in teaching is oversimplification; students might think they understand the concept because the instructor explained the idea so well (Simmons, 2006). Place that concept in the context of a real-world story, such as an open-ended essay question, and the students now have the opportunity to demonstrate actual comprehension by communicating the concept in their own words, applying the concept to the context of the story as well as other contexts (including their own), and addressing nuances introduced within the narrative they encounter.

Stories can be used in many different ways to support teaching and learning. They may be generated by the instructor or the students, or they may be adopted as texts written by other authors. The narratives used to share the story may take many forms, from traditional oral or written narratives to those using relatively new technologies of digital storytelling or data visualizations. One of the current authors (KB) particularly enjoys having students use cartoons as a medium for storytelling, and there is good evidence for the efficacy of using cartoons for storytelling purposes with children and adolescents (e.g., Drake & Drake, 2001; Van Horn & Kan, 2016). With such a wide array of possibilities, providing comprehensive "how-to" instructions here for using stories in one's teaching is prohibitive. However, we can offer a few tips and examples for those instructors who wish to more intentionally incorporate story into their pedagogical repertoires.

As instructors, we should be intentional in using stories for a specific pedagogical purpose (Deniston-Trochta, 2003). First, we should be clear in identifying the specific content or principle that we are teaching. For example, if we are attempting to teach about the importance of empirical evidence, the story should be constructed to engage students in the task of examining information. The story should be personally relevant to the student, not the instructor. For example, a common introductory psychology activity involves providing a "personalized" horoscope to each student (i.e., a variation on the "Barnum effect"). In reality, the prediction, nominally personalized for each student, is merely the same for every student. However, this engagement becomes personally relevant, and the student internalizes the experience, thus learning about the importance of empirical evidence. In other words, the studentengaged in constructing his or her own personal narrative-may be more likely to learn the intended concept.

Stories are even more effective when they contain unusual or memorable content. Einstein, McDaniel, and Lackey (1989) described the "bizarreness effect." They found that introducing bizarre or unusual information results in better recall. So, if an instructor creates intrigue—an unusual outcome to a story—students are more likely to remember the information. The important aspect to remember is that the bizarre information should enhance the content that we are intentionally presenting.

Getting Started

Once the purpose of incorporating a story into the classroom is clear and the source and format determined, much work often remains in crafting the story or relevant assignment. For instructors looking to improve their storytelling craft, there are resources available. One long-standing method of teaching through storytelling is by using the case study approach (Fawcett & Fawcett, 2011; Schiller, 2012). In particular, the National Center for Case Study Teaching in Science (NCCSTS) is a particularly rich resource of more than 400 peer-reviewed case

studies with support materials and classroomready handouts, all accessible at http:// sciencecases.lib.buffalo.edu/cs/. Schiller (2012) described the site's many cases specific to psychology in areas such as eyewitness testimony, research ethics, therapeutic treatments, the generation of hypotheses, functioning of cortical areas, nature versus nurture, racism and social psychology, schizophrenia diagnosis, cognitive dissonance theory, and much more. Instructions are also available for faculty members who wish to submit cases for consideration to the NCCSTS. Another resource available about the use of story as a pedagogical strategy is a free ebook edited by Brakke and Houska (2015) titled Telling Stories: The Art and Science of Storytelling as an Instructional Strategy. Written with teachers of psychology in mind, the 16 chapter authors in this book cover a broad range of story applications for the classroom, and it can be downloaded at http://teachpsych.org/ ebooks/tellingstories.html. The chapters of this volume also include a wealth of additional scholarly resources for incorporating story into one's pedagogical toolkit.

As a discipline that focuses on human behavior, psychology is particularly well suited to share its history through the use of story. Our stories about the emergence of psychology from the discipline of philosophy are simultaneously classic and contemporary. A researcher's curiosity about whether everyday Americans would demonstrate the same obedience to authority as everyday Germans who became soldiers during World War II led Stanley Milgram to conduct a series of studies that allow teachers of psychology to tell poignant stories about conformity. Well-known characters such as Wilhelm Wundt, G. Stanley Hall, Sigmund Freud, and Carl Jung can lead to rich class discussions about the founding of psychology but also alert us to the vast discrimination in American educational systems and within psychology regarding diverse female students and non-White male students. All of these stories are both rich and important to share. There are so many more examples of how the stories of psychological research—especially those that are often highlighted in the introductory psychology course are the stories of our humanity and of our discipline.

For those who prefer student-generated stories, life narratives can be integrated into a

number of psychology courses. Such narratives naturally integrate psychological content as they bridge past, present, and future experiences. The opportunities for reflection inherent in constructing life narratives can assist students in developing an internalized, evolving, and integrated story of one's identity (McAdams & McLean, 2013). When developing an assignment asking students to share their life narratives, instructors should carefully consider the assignment prompt so that it provides sufficient guidance for the reflection to fulfill the purpose of the assignment while respecting the ethical boundaries necessitated by asking students to disclose personal experiences and reflections. Examples of life narrative prompts can be found on several websites, including https://www .nytimes.com/2016/10/20/learning/lesson-plans/ 650-prompts-for-narrative-and-personal-writ ing.html and https://www.academicwritingsucc ess.com/11-excellent-personal-narrative-writ ing-prompts-for-college-students/.

Closing Thoughts

No pedagogical technique is a panacea, and Abrahamson (2006) and Foy (2015) are wise to point out the risks to storytelling in the college classroom. If stories are used too often, students may think that psychology is based on storytelling and not empirical research (see also Green, 2004). Depending on the overall structure of the course, another risk may be that stories are thought of as entertaining "only" and as a break from "content." Another concern is that students may become overly intrigued or distracted with certain topics within psychology because of a good story and may miss out on larger themes. Knowing these potential pitfalls, an instructor should take care to help students avoid these misdirects so that the beneficial effects of storytelling can be maximized and that the ultimate goals of the course can be realized (Foy, 2015). Although we do not want to overstate the importance of story in our daily lives or in the context of teaching, we believe that storytelling can be an effective pedagogical tool to add to one's teaching toolkit.

The ultimate benefit of storytelling, as highlighted throughout this teacher-ready theory review, is the special status that stories have regarding their memorability, derived through their narrative structure and the emotional investment they elicit from their audience. Stories are a method of creating mutual understanding between two individuals (Abrahamson, 2006), whether that be a father telling a story to his son or an instructor telling a story to a student. We tell the stories of classic studies in psychology because they are engaging, are creative, and lead to insights that inform and inspire future studies. When teachers of psychology gather together at conferences, they regale one another of previous gatherings, just as families tell stories at holiday gatherings and reunions—stories are ties that bind. Storytelling, when used judiciously and properly, can be a powerful pedagogical approach, and we encourage our colleagues to leverage the many uses of story in teaching. Importantly, we hope that you, as a teacher and scholar, share the stories of your experiences and outcomes through scholarly endeavors so that we can more intentionally harness this pedagogical power to collectively support student learning.

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