Educational Story as a Tool for Addressing the Framework for Information Literacy for Higher Education

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abstract: To integrate the Framework for Information Literacy for Higher Education into their professional practice, librarians are called upon to address both the cognitive and emotional aspects of their learners. The Framework does not provide prescriptive details for its own deployment, so it is up to individuals, departments, or entire libraries to choose how they will apply it. Research in psychology and neuroscience suggests that educational story holds the potential to be a powerful pedagogical tool, capable of affecting student emotional states and promoting memory formation. The authors argue that educational story suits the constraints of information literacy instruction and warrants further investigation.

Background: The Framework

In the spring of 2015, the Association of College and Research Libraries (ACRL) revealed the Framework for Information Literacy for Higher Education. Developed by a 12-member task force, this document was intended to establish ACRL’s new approach to information literacy. The Framework is a collection of five “frames” or core concepts central to information literacy. The frames are based on the theory of disciplinary threshold concepts: core tenets in a particular discipline that are transformative, irreversible, integrative, bounded, and potentially troublesome. The theory holds that threshold concepts can unlock barriers to expertise, provide a disciplinary context for novice learners to improve their understanding of their discipline, and explain how learners can contribute to the field. Each frame is subdivided into knowledge practices and dispositions. Knowledge practices articulate behaviors learners can engage in to

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increase their understanding of information literacy concepts. Dispositions describe the affective, attitudinal, or valuing dimension of learning.³

We find the introduction of the dispositions to be one of the most compelling aspects of this new approach. In the Framework preamble, the authors defined disposition as a “tendency to act or think in a particular way.” This definition is somewhat broad, but Gavriel Salomon,⁴ whom the authors of the Framework also cite, provides a more detailed definition. Salomon describes dispositions as a “cluster of preferences, attitudes, and intentions, as well as a set of capabilities that allow the preferences to become realized in a particular way.” Rather than a skill or knowledge area that can be called upon, dispositions are the feelings that motivate our behaviors. Together, knowledge practices and dispositions seek to describe the information-literate individual in a holistic way, focusing not only on skills but also on the habits of mind that belong to good consumers and producers of information.

The Standards, the Framework, and Learning Domains

From its inception, the ACRL presented the Framework as a successor to the Information Literacy Competency Standards for Higher Education. This decision met with controversy,⁵ and serious challenges were leveled at the Framework. The challenges were resolved, or at least put on hold, by the declaration that the Framework is a starting point from which individual institutions can, and indeed should, develop customized approaches to teaching information literacy and assessing competency.⁶

Both the Standards and the Framework might be acceptable starting points, but we contend the Framework is a more productive beginning. The Framework treats both cognitive and emotional aspects of learning equally, whereas the Standards emphasize the cognitive. This division goes back to learning domain theory. Benjamin Bloom, David Krathwohl, and Bertram Masia divide learning into three domains—cognitive, affective, and psychomotor—to move toward a clearer understanding of the human learning experience.⁷ These divisions do not reflect any actual separation in the human learning process but instead are designed to serve as useful intellectual constructs, to help academics and practitioners better understand the complexity of human learning. As they explicitly note, “The fact that we attempt to analyze the affective area separately from the cognitive is not intended to suggest that there is a fundamental separation. There is none.”⁸ Actual learning is an organic, messy process that necessarily involves all three domains.

Depending on what you are trying to learn, one domain might end up more important than the others. The psychomotor domain, for example, might be emphasized over the cognitive and affective domains for a student learning to become a dancer. Information literacy instruction, as guided by the Standards, emphasizes the cognitive domain: the skills and knowledge necessary to be information literate. This emphasis on the cognitive seems suitable for information literacy instruction in the same way the
emphasis on the psychomotor is suitable for a dancer. Information literacy is a predominantly intellectual pursuit, so it would seem to naturally align almost exclusively with the cognitive domain. That is true until we examine the context in which information literacy instruction typically occurs for teaching librarians: the one-shot instruction session.

In a one-shot instruction session, librarians face a myriad of challenges to creating meaningful learning experiences. Time is almost always against us. Most sessions last 50 to 75 minutes, out of which 5 or 10 of those minutes are forfeit to administrative details such as logging in to computers or explaining the objectives at hand. In comparison with a semester-long credit-bearing course, a one-shot session is a heartbeat. The context also vexes us: in the one-shot session, librarians are guest speakers, and, as a result, strangers to an established classroom culture. Before meaningful learning experiences can occur, we need to accomplish at least two or three of the following: communicate who we are, get students comfortable interacting with us, explain why they are at the library, convince them that this session will be valuable, and establish an atmosphere conducive to learning. Then there is the primary challenge of creating and deploying a lesson that promotes student engagement with information literacy skills and concepts, and encourages them to exercise these new skills and habits of mind in the future. Of those challenges, only one or two fall into the cognitive domain. Everything else rests squarely in the affective domain and can be reduced to one question: How can we inspire students to adopt a disposition, not just for the duration of a one-shot session, but for their entire college careers and beyond? Individual teaching librarians are left to answer this question on their own.

Despite these challenges, one-shot instruction sessions remain popular, and recent correlational studies show that they do likely contribute to student success. Evidently, librarians are surmounting, or at least coping, with this mix of affective and cognitive challenges. But just because librarians are coping with the challenges does not mean they are thriving. The brevity of the one-shot instruction session pushes us to focus on cognitive learning outcomes—concrete skills students can employ at point of need—which leaves little time to address the affective aspects of instruction. Furthermore, even if there were time to devote to the affective aspects the dispositions describe, the lack of programmatic support for these efforts is a deterrent. It is natural that we are more mindful of things that are being measured. Without affective programmatic outcomes, individual teachers have less motivation to develop that side of their teaching. However, the critical thinking skills necessary to be information literate are not separable from emotion, and ignoring the emotional dimension hampers learning. While not a panacea, by including the dispositions, the Framework situates the affective domain alongside the cognitive domain, acknowledging the importance of our students’ emotional states as well as their intellectual development. Even more
importantly, the Framework facilitates the programmatic support of affective outcomes alongside cognitive outcomes under the aegis of a foundational document.

Additionally, Bloom, Krathwohl, and Masia suggested there is danger in overemphasizing the cognitive domain at the expense of the affective:

Under some conditions the development of cognitive behaviors may actually destroy certain desired affective behaviors and that, instead of a positive relation between growth in cognitive and affective behavior, it is conceivable that there may be an inverse relation between growth in the two domains.12

Our concern is that an overemphasis on either cognitive or affective aspects of information literacy instruction might turn some students off. As the Framework suggests, information literacy instruction should draw from both domains to ensure the best chances for pedagogical success.

Consider a popular topic for information literacy instruction: source evaluation. Careful, effective source evaluation is time-consuming and results in sources being rejected, further research being required, and even research questions being reframed—all of which runs counter to our students’ understandable desire to be finished with their research projects. If we want students to evaluate their sources with care, we will more likely succeed if we approach our instruction with the notion that teaching students how to do something (the cognitive domain) is not the same as inspiring them to do it (the affective domain). Either domain on its own is insufficient; success requires both.

Additionally, research on the association between dispositions and library anxiety posits that teaching critical thinking dispositions can reduce library anxiety.13 This is not to suggest that information literacy instruction should become an all-singing, all-dancing theatrical production that emphasizes the dispositions at the expense of teaching skills and concepts. Not at all. Rather, we should seek balance between cognitive and affective learning outcomes or, in the context of the Framework, between knowledge practices and dispositions.

By adopting a more holistic approach to information literacy instruction, one that positions the affective alongside the cognitive, we have a better chance of creating transformative learning experiences.

Teaching Dispositions through Educational Story

Even if the Framework is accepted as representing a holistic approach to information literacy instruction, it does not provide—nor was it intended to provide—prescriptive measures for achieving the outcomes it describes. The Framework was designed to be used as a guiding document in shaping an institutional program.14 This lack of prescription might be necessary for the document to be of value to the thousands of diverse institutions that deliver information literacy instruction, but it leaves librarians saddled with the heavy lifting of implementation.
Librarians and teaching faculty have been encouraged to be imaginative and innovative in implementing the Framework in their institutions. For example, Megan Oakleaf places the onus on librarians to allow the knowledge practices and dispositions of the Framework to inspire them to focus on teaching larger information literacy concepts rather than training students to use tools, such as database interfaces. Librarians must then allow those concepts to inform the learning outcomes for programmatic assessment of information literacy in the context of individual libraries. Nonetheless, it can be challenging for some librarians to consider a complete overhaul of library instruction programs based on well-meaning suggestions and a guiding document. There are existing relationships with teaching faculty, institution-wide general education learning outcomes, and the individual culture of one’s library to consider. Rather than a complete overhaul, or even programmatic changes to instruction, we recommend introducing the Framework using a simple but powerful approach: educational story.

We submit that educational story is an effective tool for addressing the Framework. Given the research on science, story, and learning, as well as the new emphasis on addressing the affective domain alongside the cognitive in information literacy instruction, we contend that educational story has potential to be a pedagogically sound tool for librarians who teach in almost any context, including one-shot library instruction focused on a single assignment, online tutorials, orientations and tours, or credit-bearing courses. Educational story is not limited to a teacher telling a story to an audience in a classroom. With the right assignment and preparation, students could tell their own stories. Moreover, stories can vary in duration and can be deployed in a variety of contexts besides face-to-face. Video, audio, text, and still images have all proved themselves worthy and effective mediums for storytelling. Stories can also be adapted to a wide range of audiences and have the potential to incite curiosity in students who may arrive in class feeling ambivalent about learning information literacy skills. For more enthusiastic students, story can provide a meaningful context for abstract or challenging concepts.

What Do We Mean by “Educational Story”? Story has been integrated into curricula from preschool to higher education. K–12 teachers have written about the benefits of teaching through story in a variety of subjects, including science and math, and have offered many practical ideas for incorporating story into primary and secondary education. In higher education, story has been used to teach both practical and theoretical learning outcomes. From law to nursing to dentistry, educators have taught the pillars of disciplinary knowledge by way of story. It is a teaching tool that addresses both the cognitive and affective domains, possibly in equal measures.
Library and information science literature is rich with theoretical, practical, and evidence-based scholarship regarding the benefits of storytelling for children and adults alike. There are examples of story used by library administration to enhance organizational morale and invigorate benefaction. Additionally, story has been used in academic libraries to assess minority students’ information literacy skills and to inspire curiosity and authorial ownership of the research process. However, there is a lack of literature encouraging the use of story in support of information literacy instruction.

While there is an abundance of literature offering best practices for crafting a story, it is difficult, perhaps impossible, to set down a single absolute formula for creating a successful story, educational or otherwise. There are too many elements to consider, and, as Dena Huisman points out, if you use a particular set of elements to create a story, someone else can employ a completely different set of elements and achieve a similar effect. Consequently, the definition we offer here is based on the purpose the story is designed to serve. With that in mind, we offer the following working definition: educational story serves the purpose of leading its audience forth toward understanding and appreciation of a skill or concept, and aligns with specific learning outcomes. Educational story can be deployed in any medium: face-to-face, video, still image, or text. Educational stories can be comedies, tragedies, tales of great quests, or stories of rebirth. They can be classic stories, such as fairy tales, or short vignettes that relay personal experiences. Educational story can, and indeed must, entertain its audience to serve its purpose. It must also include elements that appeal to emotions or senses, which distinguish story from anecdote and make it more immersive to its audience. If the audience loses interest, the story fails. Curiosity is crucial; for an educational story to succeed, it must generate curiosity in its audience.

For example, one of the authors uses an educational story at the beginning of workshops in which students learn basic citation skills. These workshops have two learning outcomes, one cognitive and the other affective. The cognitive outcome calls for students to successfully cite a scholarly article according to Modern Language Association (MLA) citation style. The affective outcome calls for students to recognize the importance of getting even the smallest details correct. After introducing himself and explaining the session’s topic, the author tells an educational story. The story details an experience he had in graduate school, when he first grasped the importance of citation. It takes about seven minutes to tell, and describes a pop quiz and a lecture by a professor he admired. He relates the physical setting—a small seminar room dominated by a heavy wooden table—and shares sensory details such as smells and sounds. To pique audience curiosity, he introduces a small mystery near the beginning of the story and resolves it during the climax. He devotes most the story to relating the content of his professor’s lecture, the pop quiz, and his reaction to it. The lecture is a diatribe against inaccurate citations, supported by examples from the professor’s experiences on search committees and as a journal editor. At first the student is horrified, but he gradually comes around to the
professor’s perspective. By the end of the story, he accepts and embraces the message that citation is not simply a chore, but rather an integral part of serious scholarship that is necessary for professional success. He deplores his professor’s communicative style but cannot deny the lasting impact the lecture had on his life.

At the beginning of the story, the audience and the narrator occupy roughly the same emotional space: they are all students who find themselves in a college classroom, waiting to learn about citation. Like the narrator, the students feel little excitement about this topic. They might even see it as an unpleasant chore. By the end of the story, the narrator has undergone an emotional journey that fills him with a surprising appreciation for the value of careful citation. The audience, by following the story, has accompanied the narrator on that same emotional journey. If the story resonates with them, they will find themselves primed to benefit from the coming citation lesson. This author has used this story in the classroom, in different configurations and lengths, for more than 10 years. Although the story requires only a few minutes to tell, it consistently improves student engagement with the lesson. The author has observed students quoting parts of the story to one another during the subsequent citation exercises, usually to exhort their classmates to pay closer attention to details that seem insignificant but are actually important. Although the evidence for the efficacy of this story is entirely anecdotal, the effects align with the current research on story and learning.

Curiosity: The Connection between Story and Learning

Nobody knows why we forget. Forgetting could be the result of our brains having limited storage capacity, or forgetting could be necessary to keep the number of memories below a certain threshold to reduce the amount of time necessary for locating a memory. Memories, by being stored in a “biological substrate,” might also deteriorate over time, like a muscle atrophying with age. We might not yet be able to explain why we forget, but we do have some insight into what helps us form memories in the first place: rewards. Rewards can be anything desirable: money, food, sex, social status, or, most intriguingly from the perspective of a teaching librarian, information. In addition, our motivation—which scales according to desire—also plays a role. The more we want something, the better we are at learning about it. Conversely, if there is no reward, there is no motivation to learn, so the memories we form tend to be imprecise and fleeting. For example, consider an uneventful commute to work, and how few details you can recall a day or even an hour later.

Whatever the cause, our memories have functional limitations, so our brains encode high-quality memories—that is, learn—in reaction to rewards or other important events. Here we encounter an interesting problem. If you perform a series of actions that terminate in a reward (making waffles from scratch), but your brain only forms memories while or after the reward is obtained (eating fresh waffles), then you should not be able to remember which actions (the ingredients, their ratios, the temperature and duration of cooking) produced the reward. Nonetheless, waffles exist, and people recall how to produce them, so the brain does not wait to start forming memories until after the reward has been earned. It has a workaround: a system that starts forming high-quality memories when it suspects a reward might be coming. This system allows us
to remember information that might not appear relevant at the time but that later turns out to have value. This system relies on feelings of desire, such as hunger or curiosity, as triggers for the formation of high-quality memories. During this state of high-quality memory formation, we produce the most detailed memories about whatever our attention is focused on, but we also remember incidental material—things happening near our primary area of focus—at a higher rate than normal.

In short, when we feel curiosity, we learn, and the more curiosity we feel, the better we learn. For the teaching librarian, this research suggests that if we can induce our students to feel curiosity, they will recall our lessons with greater fidelity than they otherwise might. Further, if we can salt our lessons with material likely to arouse our students’ curiosity, it might yield a small but meaningful increase in student learning for the entire lesson, including the material students find tedious.

Of course, identifying and effectively deploying instructional material that arouses student curiosity is easier said than done. Fortunately, for students to obtain the benefits of reward-motivated learning, research suggests that they only need to feel curiosity to improve memory formation—they do not necessarily need to feel curiosity about the topic of instruction, although that would be desirable. The challenge, then, becomes finding an instructional tool that reliably induces curiosity in a manner that carries minimal cost in terms of class time.

Educational story has the potential to be such a tool. Stories are capable of profoundly affecting our emotional states—that much is self-evident. But stories are also capable of generating curiosity, thus improving our ability to remember. Curiosity can be “aroused by novel questions, complex ideas, ambiguous statements, and unresolved problems.” Stories routinely feature all those curiosity-inducing elements and can supply them when course material cannot. Teaching librarians often ask students to learn about topics that are as tedious as they are important. For example, even though many students are required to use it on a regular basis, rarely do you hear students cry “O teacher, do tell us more about the vicissitudes of APA citation.” We have observed that citation, on its own, inspires little curiosity in the average first-year student, and frankly, we would be concerned about the ones for whom it does. Citation, then, is a topic that would likely benefit from educational story. At its best, if delivered prior to instruction, an educational story could communicate the value of correct citation and academic honesty at an affective level, inspiring students to take the subject seriously while also generating curiosity about the story (even if they feel no curiosity about citation), priming them to remember more of the lesson’s content than they otherwise might.
Although the research is preliminary, story has also been found to induce neural coupling, a phenomenon associated with learning and communicative success. Greg Stephens, Lauren Silbert, Uri Hasson, and Charles Gross describe how the brain scans of a storyteller and audience synchronized. During the experiment, the listeners’ brains exhibited a slight delay before synchronizing with the speaker’s brain activity, which was expected. The listeners’ brains needed time to comprehend what they were hearing. However, at certain points in the story, the listeners’ brain scans exhibited synchronized brain activity before the speaker, suggesting the listeners were anticipating the speaker’s next words. Additionally, the listeners who exhibited greater anticipatory responses produced summaries of the story that demonstrated comprehension superior to that of the listeners who exhibited lesser anticipatory responses. This disparity suggested that both familiar word patterns and concepts can lead to anticipatory responses. The more predictable the word patterns and concepts are to the audience, the closer the neural coupling and concomitant comprehension will be. Story, by having familiar, predictable structures and often employing repetitive language, is especially well suited to promoting neural coupling. When combined with the beneficial effects of curiosity and reward-motivated learning, stories appear to offer an intriguing pedagogical tool.

Conclusion

Educational story can be adapted to a variety of instructional contexts, but the literature suggests that it will be most beneficial if used near the beginning of instruction, when it can promote the formation of new memories. Story also appears well suited as an introductory element in the classroom because of its ability to capture and focus the attention of groups. Consequently, we consider story to be at its best when used as a platform from which the teacher or instructional designer can transition to more explicitly pedagogical material. With that in mind, we offer the following three ideas for the use of educational story in library instruction:

1. To enhance a self-introduction. Often, instruction librarians find themselves working with classes of students who lack a clear conception of what a librarian can do for them. A concise self-introduction can be helpful under such circumstances, but creating and delivering effective self-introductions can be challenging. A good self-introduction needs, at the least, to establish the librarian’s qualifications (why students should trust this person); reveal the librarian’s personality (a unique individual is more memorable and approachable); and explain what students stand to gain from participating with the instruction session (a reward). Aside from expending limited time, self-introductions run the risk of making the librarian come across as bragging, desperate, pushy, or a
pedagogically nightmarish poison cocktail of all three. A single well-chosen educational story can establish qualifications, reveal personality, and explain what students stand to gain from the instruction session simultaneously. Details that might be received poorly if stated outright, such as claims of competence or insistence that library instruction has value, can be built into a story in such a way that students come to those same conclusions on their own.

2. To complement or possibly replace step-by-step instructions. Most of the topics taught in library classrooms, even heavily procedural topics, have at their core the goal of students being able to reproduce procedures independently. To that end, even the best step-by-step walk through of, for instance, the process of citing a scholarly article, is of limited pedagogical virtue if students are unable or unwilling to cite other articles on their own in the future. While the idea of using story to teach citation might seem counterintuitive, we consider it a prime candidate for educational story. Every citation style has a manual, and correct citation procedure may be learned by reading the appropriate manual. The primary impediment to correct citation is the student’s own reluctance to carefully consult the appropriate manual in the first place. It is a problem of motivation, which is where the educational story might prove effective. Depending on the level of the students being taught, an educational story designed to emphasize the value of taking citation seriously could precede (or be substituted for) a step-by-step demonstration of correct citation procedure.

3. In media. These earlier ideas have focused on how educational stories can be used in a traditional face-to-face classroom, but they can also potentially be applied to the creation of instructional materials for online or distance learning, such as videos, online research guides, or course readings. As novelists, filmmakers, and cartoonists demonstrate, audiences embrace stories whether or not they are delivered by a live storyteller. The challenge lies in creating a good story, not finding a suitable medium. Instructional materials produced for library instruction often focus on demonstrating a process (searching a database), explaining a concept (what copyright is), or exhorting a behavior (practice academic honesty). In all these cases, educational story offers the possibility of improving student attention, increasing retention of the material, and affecting motivation. Provided the story is constructed in a manner suitable to the medium employed, instructional materials stand to enjoy the benefits of educational story regardless of whether they are text, video, or still image.

We do not mean to suggest that story is the royal road to learning. Many of the benefits educational story appears to offer can be produced using other means, and, like any teaching tool, it comes with advantages as well as drawbacks. Not all audiences will embrace it equally. Storytelling requires planning and practice, which take time and effort. It can be difficult to deploy programmatically: not all teaching librarians will be comfortable with integrating educational story, and assessing its blend of affective and cognitive effects might prove problematic. However, under the right circumstances, educational story appears capable of yielding valuable pedagogical effects in a short time. Such a capability makes it a potentially valuable tool for the classroom, and one worthy of further study. Furthermore, anecdotal evidence suggests that teachers, including teaching librarians, routinely employ educational story. Nonetheless, to the best of our knowledge, there has been no empirical research done on its effects in the college classroom.
Suggestions for Future Research

Drawing from the literature on storytelling in education, we have identified nine possible dimensions that could be considered for the future examination of educational story:

1. Performance. Storytelling is a performance, and aptitude most likely plays a role, but how and to what degree? We recognize that some storytellers are particularly captivating, but do those talented storytellers produce better outcomes when using educational stories? If so, are there any performance-related skills that disproportionately affect the success of an educational story? To wit, are there any skills that teachers new to educational story could focus on developing to achieve better outcomes with a minimum of effort?

2. Best practices. While myriad guidebooks offer advice to beginning storytellers, there does not appear to be any such document to guide those who wish to learn how to create and use educational story under the constraints presented by library instruction. The establishment of evidence-based guidelines or best practices for educational story in the information literacy classroom would be helpful.

3. Learning. How does educational story affect students’ ability to grasp new concepts or retain knowledge over time, especially in comparison to traditional pedagogical methods? Are there particular contexts in which educational story is most effective?

4. Behavior. Can story be reliably used to motivate students to change their behaviors? Is it more or less effective than traditional motivational methods? How powerful are the effects, and how long do they last?

5. Reaction. How do students respond to educational story? Did they enjoy it? Did some enjoy it, but not others? To what degree? Russell Branaghan observes, “Students are more likely to continue training with which they are satisfied.” Given that information literacy instruction is not always required, instructional methods that encourage students to voluntarily continue learning are especially desirable.

6. Results. Does educational story have any measurable impact on student success, such as graduation rate, time to graduation, or grade point average? Is it more effective with specific demographics, such as first-generation college students?

7. Medium. Is one medium more effective than another for transmitting educational story? For example, how does video compare to face-to-face, or text? What implications might those differences, if any, have on using educational story for information literacy instruction?

8. Duration. Does a story’s length interact with its efficacy? Is there a minimum duration an educational story must meet for students to receive its benefits? Is there a maximum duration? Do those benefits scale over time?

9. Risk. Educational story does not enjoy universal acceptance. Some people might be put off by story in the classroom. How common is that attitude, and should it be factored into the decision of whether to use educational story? How strongly do skeptics of educational story feel, and how might they react to an unwelcome educational story? What interventions might be used to overcome such reservations? What happens when an educational story fails? In comparison to other pedagogical tools, is it worth the cost?

We have also identified two key challenges to the study of educational story: an overabundance of variables and a resistance to analysis. Storytellers, stories, and audi-
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Educational story are all essentially unique. Even if a storyteller told the same story to the same audience twice, the passage of time and natural fluctuations would render the storyteller, the story, and the audience somewhat different on the second telling. What remains the same is greater than what has changed, but the number of variables complicates any investigation into the effects of educational story. Perhaps worse is story’s resistance to analysis. Branaghan cautions that educational story might be a synergistic phenomenon, replete with its own challenges:

For example, the typical scientific approach is one of reductionism, divide and conquer. We analyze the components of a phenomenon by breaking them down into their parts and study them in isolation from the other parts. This approach may not work for contextually rich learning strategies. These components may not be easily separated and studied under controlled conditions. For example, how would you study the effects of authenticity after you have removed the quality of engagement? Could engagement be effectively separated from authenticity? Similarly, how do you study engagement in the absence of emotion? It becomes very difficult to tease these apart. If components are removed you may remove more than just the benefits of that one component. Perhaps the whole is worth more than the sum of its parts. This will make the typical reductionist approach of divide and conquer difficult to employ and may require a continued focus on more naturalistic research.

While we have sought to make a case for the scientific basis for the use of story in the classroom, our argument rests on a patchwork of research drawn from multiple fields. The research we have assembled supports the widespread and ongoing use of story in the classroom and suggests that story possesses the potential to improve student learning across both affective and cognitive domains, making it an intriguing tool for addressing the Framework. Educational story appears to hold promise, and we hope this article will serve as a warrant for additional research into educational story.

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Notes


8. Ibid.

9. Megan Oakleaf, Steven Hoover, Beth S. Woodard, Jennifer Corbin, Randy Hensley, Diana K. Wakimoto, Christopher V. Hollister, Debra Gilchrist, Michelle Millet, and Patricia A. Iannuzzi, “Notes from the Field: 10 Short Lessons on One-Shot Instruction,” *Communications in Information Literacy* 6, 1 (2012): 5–23.


14. ACRL, Framework for Information Literacy for Higher Education.


28. Ibid.; Murty, Ballard, Macduffie, Krebs, and Adcock, “Hippocampal Networks Habituate as Novelty Accumulates.”

29. Gruber and Otten, “Voluntary Control over Prestimulus Activity Related to Encoding.”


34. Gruber and Otten, “Voluntary Control over Prestimulus Activity Related to Encoding.”


39. Ibid.