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Story-Driven Learning in Higher Education: A Systematic Literature Review

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Story-driven Learning in Higher Education: A Systematic Literature Review

Abstract

Stories have been a pervasive, ubiquitous feature of our lives throughout human history—indeed, storytelling itself is robustly associated with a host of positive benefits, including better mental health (Robertson et al., 2019), increased empathy (Cummings et al., 2022), and a greater sense of belonging (Ritter et al., 2019). As such, storytelling has the potential to be a powerful tool in a range of settings, including higher education (i.e., story-driven learning). To uncover how story-driven learning has been used in higher education so far—as well as to discover patterns in pedagogical methods and student outcomes—we conducted a systematic literature review of the topic. We sought answers to the following research questions: *1) How do scholars define storytelling? 2) What benefits do scholars conjecture storytelling and personal narratives provide to students in higher education? 3) What pedagogical approaches have been used to integrate storytelling into learning activities in higher education? 4) How have scholars approached studying the impact of story-driven learning in higher education?* After querying Google Scholar and applying our exclusion/inclusion criteria, we identified 37 articles that centered on story-driven learning in higher education. Although the articles ranged in terms of educational discipline and form of storytelling focus (e.g., theoretical, empirical, case study, etc.), student outcomes from the respective story-driven learning approaches tended to align across articles. Most commonly, outcomes tended to involve at least one of the following areas: 1) leadership and career skills, 2) well-being, 3) empowerment among marginalized groups, 4) self-concept clarity, 5) empathy and sense of belonging, and 6) learning skills and engagement. While the results from our analysis revealed a relative paucity of story-driven learning in higher education, the conclusions show a range of positive impacts for students—highlighting the potential utility of story-driven learning.

Story-driven Learning in Higher Education: A Systematic Literature

Introduction

As of 2021, 63% of all American adults have attended college (Schmidt, 2021). The cost of higher education in the United States, however, comes down to more than just tuition. Empathy on college campuses has decreased by 40% since the 1970s (O'Brien et al., 2010), students are struggling to feel a sense of belonging (Dutcher et al., 2022), and undergraduate mental health is at an all-time low. During the 2020–2021 school year, more than 60% of undergraduates met the criteria for at least one mental health disorder (Lipson et al., 2022), almost three-quarters of students reported moderate or severe psychological distress and student mental health is at an all-time low since the onset of the COVID-19 pandemic (Advanced Solutions, 2021). Engineering students, in particular, suffer from anxiety and depression at a higher rate than those found in the general population—due, in part, to their high academic demands—and are less willing to seek help for their mental health than non-engineering students (Bork & Mondisa, 2022).

While educational content in the college classroom focuses on preparing students for their eventual career, higher education also needs to attend to students' holistic development by addressing the critically low levels of well-being, connectedness, and flourishing in its student body. In fact, educational experiences that target empathy, belonging, connection, and overall well-being are just as important for personal and professional development as learning subjects such as biology or sociology (Way et al., 2018).

One potential tool for targeting such outcomes is story-driven learning. Stories can not only help students learn educational material (Shank, 2006), but harnessing students' *personal stories* in the classroom has the potential to powerfully influence students' outcomes regarding empathy, sense of belonging, sense of self, leadership potential, and well-being. While research outside of higher education already supports the use of story-driven learning for such aims (Kellas, 2017; Manney, 2008; Sonn et al., 2014), we wanted to understand 1) the extent to which story-driven learning has been applied in higher education contexts and 2) how college students have been impacted by the story-driven learning approaches so far implemented.

To uncover the work that presently exists on this topic, we conducted a systematic literature review (SLR). In our review, we pursued answers to the following research questions (RQs):

- **RQ1:** How do scholars define storytelling?
- **RQ2:** What benefits do scholars conjecture storytelling and personal narratives provide to students in higher education?
- **RQ3:** What pedagogical approaches have been used to integrate storytelling into learning activities in higher education?
- **RQ4:** How have scholars approached studying the impact of story-driven learning on students learning in higher education?

Background on Storytelling

American essayist Joan Didion (1979) once wrote, "We tell ourselves stories in order to live" (p. 11). Stories are a ubiquitous feature of human lives, allowing us to generate a sense of meaning and purpose from our lived experiences. We create stories of day-to-day events, share these stories in our daily conversations, and ultimately weave together a diverse array of

experiences to build cohesive and coherent narratives of our lives (Bruner, 1990; McAdams, 1996).

Storytelling, moreover, is just as longstanding as it is universal. The earliest stories discovered—cave paintings found in Indonesia—date back at least 43,900 years (George, 2019). Humans came into being with a set of basic survival needs, in which storytelling played a crucial role. Storytelling transcends boundaries and disciplines, with fictional and non-fictional stories being depicted and disseminated through art, technology, writing, and speaking. Because stories play a critical role in offering opportunities for meaning and connection in our lives, many scholars and researchers have attempted to harness its benefits through storytelling interventions and approaches (Pennebaker & Beall, 1986; Sharif et al., 2018; Suhr et al., 2017). These approaches take on an array of forms, ranging from written journal entries to the oral sharing of stories with both strangers and loved ones, and have investigated a broad range of salutary outcomes.

In the field of psychology, for example, researchers have examined the utility of *expressive writing* (i.e., the writing of challenging life experiences) (Pennebaker & Beall, 1986). Decades of research on expressive writing have since accrued, showing how such interventions promote improved health and well-being. Findings have indicated that expressive writing significantly alleviates depressive symptoms (Suhr et al., 2017) and enhances resilience and reduces symptoms of posttraumatic stress disorder in survivors of domestic violence and other instances of trauma (Glass et al., 2019; Koopman et al., 2005). Expressive writing, moreover, seems to lead to a host of positive outcomes for diverse populations, including reducing symptoms in those inflicted with fibromyalgia, breast cancer, and AIDS (Epstein et al., 2005; Frisina et al., 2004), as well as improving self-acceptance in LGBTQ+ individuals (Pachankis et al., 2010).

The utility of life stories, moreover, has also been popularly applied in medical contexts (Robertson & Clegg, 2016). Life review is a form of therapy that helps (typically elderly and/or terminally ill) patients resolve past conflicts, reconstruct their life stories, and accept their present conditions (Sharif et al., 2018). While constructing personal narratives tends to provide meaning and satisfaction broadly, life review therapy provides a structured process of reflection at a particularly vulnerable period: end-of-life. Implementing life review therapy has been shown to improve spiritual well-being and reduce depression symptoms in terminally ill patients (Hess et al., 2019) and improve the quality of life in elderly patients (Sharif et al., 2018).

As such, storytelling broadly, like research on expressive writing, takes on a far-reaching utility—with story-based applications also touting improvements in feelings of belonging and connectedness (Sonn et al., 2014), empathy (Manney, 2008), and mental health (Kellas, 2017). While storytelling—as both an intervention and a pedagogical approach—has been commonly applied in medical and therapeutic contexts (among others), we believe it may be less commonly applied in higher education spaces. Through this systematic literature review, we sought to better understand how *story-driven learning* (SDL), a novel form of pedagogy, can be applied in higher education spaces. Through SDL, students are engaged with crafting and sharing their evolving life stories and imagining their future selves. The intended learning outcome is to help them build a sense of identity and purpose to their lives, as well as to further their personal and social responsibility (Morgan et al., 2021).

In this SLR, we examine the extent to which personal narratives (i.e., story-driven learning) have been used in higher education thus far, as well as how such pedagogical approaches have impacted students.

Theoretical Framework

In 2012, the National Research Council published a book to highlight the wide-ranging set of modern-day skills that students need to develop to reach their potential as adults (National Research Council, 2012). They name three distinct domains in which students need to develop competency: 1) The Cognitive Domain, 2) The Intrapersonal Domain, and 3) The Interpersonal Domain. Each domain contains three clusters of competencies, as described below:

- **The Cognitive Domain** includes three clusters of competencies: cognitive processes and strategies, knowledge, and creativity. These clusters include competencies, such as critical thinking, information literacy, reasoning and argumentation, and innovation.
- **The Intrapersonal Domain** includes three clusters of competencies: intellectual openness, work ethic and conscientiousness, and positive core self-evaluation. These clusters include competencies, such as flexibility, initiative, appreciation for diversity, and metacognition (the ability to reflect on one's own learning and adjust accordingly).
- **The Interpersonal Domain** includes two clusters of competencies: teamwork and collaboration and leadership. These clusters include competencies, such as communication, collaboration, responsibility, and conflict resolution.

While research has shown a host of positive outcomes (i.e., educational attainment, career advancement, and physical health) as a result of successful development in The Cognitive Domain, far less research has been conducted in The Intrapersonal and The Interpersonal Domains—which indicates the ways in which these forms of knowledge are traditionally less valued. In terms of intrapersonal competencies, however, researchers have studied the impact of personality traits on different career and educational outcomes. Judge and colleagues (1999) found that conscientiousness and emotional stability were predictive of career success.

Borghans and colleagues (2008), meanwhile, studied the role of interpersonal competencies in the labor market and found that "people skills" are a vital determinant of occupations and wages. However, the role of interpersonal competencies as a critical learning opportunity is, by far, the most underexamined. The National Research Council (2012), however, argues that both The Interpersonal and The Intrapersonal Domains are vital areas of learning in the 21st century. Because storytelling traditionally impacts such lesser prioritized areas of knowledge (i.e., empathy, self-concept, connectedness, etc.), we decided to use this model of learning to guide our inquiry of story-driven learning in higher education.

Method

Literature search

In the current investigation, Google Scholar, as a primary search tool, was chosen in that Google Scholar covers such a comprehensive, systemic scope of articles that other database (e.g., Web of Science) are largely redundant (Gehanno et al., 2013; Martín-Martín et al., 2018). Our initial search inquiry keywords were *personal narratives, stories*, *engineering*, *classroom, university, college, students, STEM, education, intervention, pedagogy,* and *psychology*. Through iterative searching using these keywords, some new keywords were added (e.g., *expressive writing intervention*) and removed (e.g., *students*). Ultimately, we ended up using the following keywords: e*ngineering, education, narrative(s), personal narrative, storytelling, story, stories,*

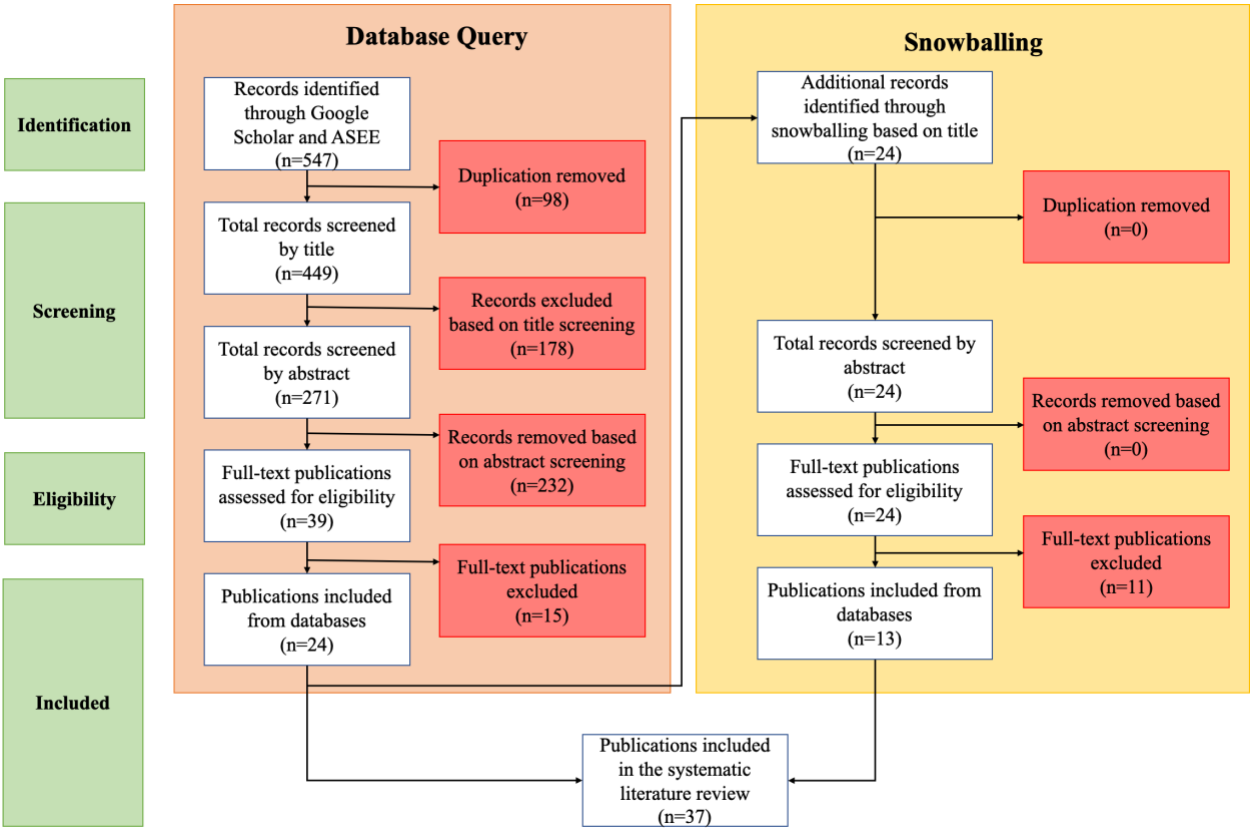
psychology, STEM, college, university, expressive writing intervention, pedagogy, curriculum. At the same time, our target samples were post-secondary students in higher education, such that we excluded studies targeting students with primary and secondary education students. Further, we excluded studies about individual development for students with disabilities as well as foreign language acquisition with students speaking English as a second language (or foreign language or L2). Such keywords like *childhood, secondary, disability,* and *ESL* were entered as exclusion words.

Because neither Boolean terms nor an asterisk function could be used in Google Scholar, we alternatively use the advanced search function embedded in Google Scholar, that is, (a) with *all* of the words, (b) with *at least one* of the words, and (c) *without* the words. As such, we generated 33 search queries in Google Scholar, by varying the keywords combination. Appendix A included our search query combination used in Google Scholar for the current study. One example of search queries was:

with *all* the words: storytelling narrative
with *at least one* of the words: college university
without the words: secondary elementary disability ESL disorder

Moreover, Google Scholar provided hundreds of thousands of search results. We only selected articles from the first 300 hits from each keyword search. As such, a total of 547 articles were found in Google Scholar searches. After excluding 98 duplicates (i.e., 449 articles), title and abstract screening was conducted to determine if the articles met all of the inclusion criteria. We read the entire article if the title and abstract were not sufficient to determine whether all the criteria were met. Based on the title and abstract screening, 39 candidate articles were identified, and a full-text examination was conducted to create our final list of articles applicable to the aims of this SLR. Ultimately, 24 articles were identified as relevant to our SLR. The references of these articles—as well as the articles that cited them—were further examined, using *backwards and forwards snowballing techniques*, which has been used in prior work conducting systematic literature reviews (e.g., Lunn et al., 2022). Doing this allowed us to find an additional 13 relevant articles. As such, we identified a total of 37 articles relevant for inclusion. The complete list of publications analyzed in this study is included in the references section, each identified with an asterisk (*). See Figure 1 for the number of studies included in this review.

Figure 1
Selection Process



Inclusion Criteria

Articles were included if they met all the following criteria:

- The article should investigate a storytelling intervention that focuses on a person's own *personal narratives* rather than creative writing (i.e., fiction, poetry) or hearing another's stories.
- The storytelling intervention may be an oral or written storytelling intervention.
- The article can be either theoretical, conceptual, or empirical. Empirical studies can be either quantitative (e.g., experimental, quasi-experimental), qualitative, or mixed methods in nature.
- The article should target post-secondary students (i.e., undergraduate students and graduate students) in higher education contexts (e.g., college, university).
- The article should be conducted in students' primary or home language (L1).
- The article can cover all disciplines (i.e., STEM, non-STEM, general education).
- The article should be published in a peer-reviewed academic journal or conference proceedings. Studies published in peer-reviewed journals are believed to have high quality as well as demonstrate full study results, beyond pilot-test results or incomplete data analysis. Dissertation/thesis, book chapters, and general review articles were excluded.
- The article should be written in English. If the original language in the study was not English, but was then translated and published in English, the study was included.

Interrater Reliability

The first and second authors independently reviewed full texts, assessing them based on the inclusion and exclusion criteria described. Percent exact agreement was 83% for the full-text review and 82% for the snowballing articles. All disagreements were resolved through discussion and both authors agreed on the final list of included articles.

Results

RQ1: What are the fundamentals of storytelling?

Storytelling—as widely understood—provides an account of an event or series of events, lending plot and coherence to real and fictionalized moments in time (Maggio, 2014). However, for the purposes of this SLR, we are focusing only on autobiographical (i.e., non-fiction) storytelling. Across the 37 articles featured in this SLR, scholars expanded on this definition by discussing the fundamentals of storytelling: 1) self-insight and meaning-making, 2) opportunities for interpersonal connection, and 3) possibilities for discovery and change.

Self-Insight and Meaning-Making

Six of the articles specifically discussed the process of self-insight and the search for meaning as core principles of storytelling (Adams et al., 2007; Chandler, 2002; Gates et al., 2018; Hlalele & Brexa, 2015; Lengelle et al., 2013, 2014). Stories, as generated from our lived experiences, provide us all the opportunity to make meaning and derive purpose from the things that have happened to us—and, often, that meaning is focused on our understanding of the self.

Hlalele and Brexa (2015) describe autobiographical writing as having the "potential for self-insight," while Lengelle and colleagues (2013, 2014) similarly emphasize storytelling as a mechanism for gaining self-insight. Moreover, both Gates and colleagues (2018) and Adams and colleagues (2007) made the explicit connection between meaning-making and self-insight, with Adams writing: "Stories are a device for diagnosing and interpreting identities and identity pathways." Our sense of self evolves over time—our identity is inextricably tied to how we move about the world—and the stories we construct and reconstruct our lived experiences are integral to our developed identity.

Chandler (2002), lastly, expanded on this process of identity and meaning-making by positing that narrative writing "can facilitate the process of moving from 'wounded to wholeness' through the perspective gained on their lives by observing, finding meaning, and placing challenges in a larger context." This suggests that storytelling is not just an exploration of identity and a pursuit of meaning but can also be a therapeutic process that allows the meaning discovered to apply a balm to some of our most tender experiences.

Opportunities for Interpersonal Connection

Implied in the word itself, storytelling suggests both a speaker and a listener. It is not surprising, therefore, that a critical aspect of storytelling also appears to be the opportunity for connection that it provides—which six of the articles highlighted (Adams et al., 2007; Chandler, 2002; Eskandari et al., 2015; Landrum et al., 2019; Prihatsanti et al., 2020; Wang, 2020). When personal stories are shared with another, the connection between the speaker and the listener can grow.

One way that connectedness is established is through the emotions conveyed and experienced through a story. Both Wang (2020) and Prihatsanti and colleagues (2020) highlighted this aspect, which seems to be a critical component regarding how empathy is

generated through storytelling. Wang (2020) wrote: “Stories allow emotions to be incorporated, and they can appeal to both a storyteller’s and a listener’s emotions. Thus, stories can create empathy.” Storytelling offers us a lens through to which to understand others’ experiences and, in that way, is one of the ultimate drivers of empathy.

Moreover, part of that process of empathy development is that storytelling allows us “to discover the needs of others” (Eskandari et al., 2015) and “to imagine new perspectives and worlds” (Adams et al., 2007). In this way, storytelling moves us outside of the limited nature of our own experience, to better understand the voices and perspectives of those outside our individual spheres. This not only fosters connection and empathy but is also an opportunity for personal growth and learning.

Possibilities for Discovery and Change

Lastly, stories are a medium in which discovery is ever-present. We are not only discovering the development of a story as it unfolds, but also discovering new truths about ourselves and others through its enaction. Four of the articles featured in the SLR included discovery as a central feature of storytelling (Adams et al., 2007; Chandler, 2002; Covarrubias & Laiduc, 2022; Eskandari et al., 2015).

Storytelling allows individuals to “discover their values, ethics, and underlying assumptions” (Chandler, 2002) and to challenge “our interpretations” of obstacles (Covarrubias & Laiduc, 2022). In this way, stories build on identity insight and clarification and move into the realm of discovery and change. Stories are powerful vehicles for change, with narratives often—across countries, disciplines, and mediums—acting as the compelling drivers behind social and structural change. Adams and colleagues (2007) highlighted the ways in which stories can be used for change and innovation, by “eliciting insider knowledge, engaging communities of learners around shared practices, and building new knowledge”.

RQ2: What benefits do scholars conjecture storytelling and personal narratives provide to students in higher education?

Across the 37 articles featured, repeated findings and conjecturing began to emerge regarding student impact from story-driven learning. Virtually all these studies’ findings and theoretical arguments can be collapsed into at least one of the following six outcomes: 1) empathy and sense of belonging, 2) well-being, 3) empowerment among marginalized groups, 4) self-concept clarity, 5) leadership and career skills, and 6) learning skills and engagement. While some of these outcomes aligned with The Cognitive Domain (i.e., learning skills) in our theoretical framework (National Research Council, 2012), most of the student outcomes better align with The Interpersonal (i.e., empathy, sense of belonging) and The Intrapersonal (i.e., empowerment, self-concept clarity, well-being) Domains of learning.

Empathy and Sense of Belonging

Heightened empathy and sense of belonging was the most robust finding from this SLR, with 10 of the articles pointing to this form of student impact (Adams et al., 2007; Benmayor, 2008; Chandler, 2002; Covarrubias & Laiduc, 2022; Cowen et al., 2016; Daryazadeh et al., 2020; Gates et al., 2018; Georges, 2020; Johnsen et al., 2022; Montalbano & Ige, 2011). Through storytelling, the relationship between listener and storyteller can often be impacted by the vulnerability exhibited in the sharing of personal stories. We tend to feel closer to others who

share personal stories with us, and vice versa. Moreover, through storytelling, we can—briefly—inhabit the world of another and that new perspective can allow us to become more empathetic.

Chandler (2002) specifically targeted the community aspect of storytelling, by studying an intergenerational co-writing approach and found that the students (college and K-12) felt a greater sense of empathy and connection through the exercises. Empathy and storytelling, however, has been more commonly studied in medical school contexts—due to the unique need for empathy among medical professionals. Two studies found that story-driven learning was helpful in increasing levels of empathy among medical students (Cowen et al., 2016; Daryazadeh et al., 2020).

Other studies highlighted the related constructs of connectedness and sense of belonging. Feeling a sense of belonging is critical throughout our lives but can be both particularly urgent and tenuous during the college years. Across disciplines and styles of story-driven learning, the use of personal narratives was frequently found to assist with feelings of connectedness and belonging (Adams et al., 2007; Benmayor, 2008; Covarrubias & Laiduc, 2022; Georges, 2020; Johnsen et al., 2022; Montalbano & Ige, 2011).

Well-Being

Eight of the articles highlighted the impact of story-driven learning on students' well-being and emotional state (Alparone et al., 2015; Batista et al., 2022; Booker & Dunsmore, 2017; Gortner et al., 2006; Kennison et al., 2019; King, 2001; Prihatsanti et al., 2020; Robertson et al., 2019). Many of these articles, moreover, used expressive writing as their form of story-driven learning.

Several studies found that expressive writing (i.e., reflecting on life experiences, commonly difficult ones) resulted in less depressive symptoms amongst college students (Gortner et al., 2006; Robertson et al., 2019), decrease in the stress-related hormone cortisol (Kennison et al., 2019), and lower anxiety levels (Alparone et al., 2015). Expressive writing that focused on emotion disclosing, meanwhile, led to more positive affect and self-disclosure, while gratitude-focused writing led to more life satisfaction, with neither form of writing, however, having a significant impact on depressive symptoms (Booker & Dunsmore, 2017). Writing about life goals, meanwhile, was associated with a significant increase in subjective well-being and a long-term positive impact on physical health (King, 2001).

In other story-driven learning interventions, meanwhile, ambivalence toward change, rumination, and distress significantly decreased throughout an online writing program (Batista et al., 2022). Similarly, story-driven learning in Indonesia led to increases in psychological capital (i.e., hope, self-efficacy, resilience, optimism) and ability to adjust to change (Prihatsanti, 2020).

Empowerment Among Marginalized Groups

Eight of the articles highlighted the utility—either through case studies, qualitative studies, or theoretical conjecturing—of storytelling for fostering empowerment, particularly amongst marginalized students (Benmayor, 2008; Covarrubias & Laiduc, 2022; Georges, 2020; Hlalele & Brexa, 2015; Jehangir, 2010; Kelly & Bhangal, 2018; Montalbano & Ige, 2011; Perez et al., 2021). Several articles, in advocating for the implementation of story-driven learning, theorized about the potential power of story-driven learning to greater empower students from marginalized backgrounds (Covarrubias & Laiduc, 2022; Georges, 2020; Montalbano & Ige, 2011). By focusing aspects of education on the lived experiences of marginalized students, Covarrubias and Laiduc (2022) argue that "there is the potential to call attention to and name

problematic ideologies and oppressive systems that permeate higher education…[ultimately] the goal is to leverage difference as a pathway for social change."

A case study, moreover, illustrated the utility of story-driven learning for the empowerment of students (Benmayor, 2008). Digital storytelling about gender also worked to the benefit of a group of young women in South Africa, who reported greater empowerment and feeling more like agents of change in breaking down problematic gender stereotypes (Hlalele & Brexa, 2015). Two larger studies focused on how personal storytelling in the classroom impacted low-income students, finding that such pedagogies assisted with self-understanding and developing a greater sense of belonging at their respective higher education institutions (Jehangir, 2010; Perez et al., 2021). Perez and colleagues (2021) write: "Engaging in critical self-reflection and subsequently being validated can help students recognize their strengths and the power of their low-income background rather than viewing them as a deficit."

Self-Concept Clarity

Eight of the articles discussed the impact of story-driven learning on the development of self-concept clarity (i.e., a clear and coherent sense of oneself) and greater identity processing (Albert & Vadla, 2009; Armstrong & McCain, 2021; Chandler, 2002; Gates et al., 2018; Morgan et al., 2021; Perez et al., 2021; Prihatsanti et al., 2020; Wu & Chen, 2020). An intervention involving six sessions in a storytelling module increased feelings of self-efficacy (Prihatsanti et al., 2020), while an intergenerational co-writing approach improved one's connection to the self (Chandler, 2002). A systematic literature review of educational digital storytelling approaches, meanwhile, found that studies commonly identified improved identity-related self-awareness (Wu & Chen, 2020).

Other studies on story-driven learning found improvements in self-understanding (Perez et al., 2021) and feelings of imposter syndrome (Gates et al., 2018). Lastly, other articles (Albert & Vadla, 2009; Armstrong & McCain, 2021) highlighted the skills in vulnerability developed through such exercises. Albert and Vadla (2009) write: "Through the creation of a space that allowed for risk taking, vulnerability, and self-reflection, students…were encouraged to explore the power of personal authorship and move to the edges of their own knowing. This process had the effect of moving students more deeply into their own authentic selves and allowed them to emerge with a greater clarity and confidence." While authenticity and vulnerability are skills uncommonly taught, such skills remain vital for personal development.

Lastly, a newly required course ("The Art of Telling Your Story") in a biomedical engineering program found that story-driven learning assisted with the development of students' self-concept clarity (Morgan et al., 2021). Moreover, the course was designed to help target another intended outcome: *entrepreneurial mindset* (EM). EM not only regards the development of students' engineering skill set, but to also automate the use of that skill set to create value for themselves, others, and society as a whole. The entrepreneurial mindset involves the constant intention to create value, coupled with curiosity and a desire to make connections across seemingly unrelated information (Morgan et al., 2021). As such, EM cuts across both self-concept clarity and leadership outcomes to foster students' holistic personal and professional development.

Leadership and Career Skills

Five of these articles found enhanced leadership and career skills amongst students who engaged in story-driven learning approaches (Albert & Vadla, 2009; Armstrong & McCain,

2021; Cowen et al., 2016; Lengelle et al., 2013, 2014). These studies harnessed largely expressive and reflective writing (i.e., critically analyzing a personal experience) exercises in a variety of contexts: career-writing courses, leadership courses, medical school (Albert & Vadla, 2009; Armstrong & McCain, 2021; Cowen et al., 2016; Lengelle et al., 2013, 2014). These studies saw a natural link between personal narrative construction and the development of critical career skills, oftentimes incorporating personal writing into established educational career settings.

One study showed that a 2-day career writing course in the Netherlands, which incorporated reflective writing (concerning students' experiences regarding their work assignment) both before and after a work placement, assisted students with the development of a work-life narrative (i.e., a story of their career identity) (Lengelle et al., 2013). Moreover, further analysis based on this course revealed that the writing exercise led to more positive work evaluations from supervisors and fewer negative emotion words relative to the control group, who did not complete any reflective writing (Lengelle et al., 2014). Among medical students, too, reflective writing appeared to aid in the formation of a professional identity (Cowen et al., 2016). Moreover, other story-driven learning approaches found that students also experience greater clarity and confidence in their leadership voice (Albert & Vadla, 2009) and greater skills in both mentorship and listening (Armstrong & McCain, 2021).

Learning Skills and Engagement

There was also some evidence suggesting that story-driven learning can assist with learning skills and engagement, as evidenced in three of the articles (Ehrlich et al., 2020; Eskandari et al., 2015; Georges, 2020). Ehrlich and colleagues (2020) found that incorporating story-driven learning led to increased engagement in the classroom, with students reporting that it improved their educational experience. Moreover, through including story-driven learning in a design methods course, Eskandari and colleagues (2015) helped students improve their learning strategies and allowed them to develop better, more human-compatible designs. Moreover, Georges (2020), in his brief on storytelling in higher education, evoked several studies that supported the ways in which storytelling can aid in student learning.

RQ3. What pedagogical approaches have been used to integrate storytelling into learning activities in higher education?

Of the 37 articles, 13 of the articles addressed pedagogical approaches identified in story-driven learning within a higher education context. We identified three main themes, that is, (1) instructor eliciting students to share personal stories and experiences, (2) instructor facilitating students to frame the meaning of their stories, and (3) instructor building a psychologically safe learning environment. These instructional practices that instructors implement in a classroom are dynamic and adaptable, as needed, in response to classroom circumstances, rather than in a sequential manner.

Instructor Eliciting Students to Share Personal Stories and Experiences

We identified three pedagogical approaches that broadly corresponded to instructors eliciting students to share personal stories and experiences. First, instructors use a variety of materials in storytelling learning. Instructors were found to employ a variety of materials (e.g., autobiographical texts, video) to introduce story prompts (Prihatsanti et al., 2020). Second, instructors encourage students' attentive listening when listening to others' stories. Before a

student shares a story orally, an instructor encourages students' attentive or active listening (Chandler, 2002; Prihatsanti et al., 2020), while paying attention to non-verbal cues. Third, instructors encourage students to elicit and share their personal stories with others on a learning discussion board (Chandler, 2002; Enrlich et al., 2020) or orally (Gates, 2018; Georges, 2020; Prihatsanti et al., 2020). In particular, students' oral storytelling is potent in engaging their voices and relating with other students (Chandler, 2002). Such connections can be further beneficial in building community or a process of bonding with students.

Instructor Facilitating Students to Frame the Meaning of their Stories

Further, we found five pedagogical approaches corresponding to the emerging theme, instructor facilitating students to frame the meaning of their stories. First, instructors affirm students' personal stories through applause, hugs, and/or tears depending on the tone of the stories (Benmayor, 2008) and praise how students transformed a vulnerable situation in their lives (Perez et al., 2021). In addition to the instructor's affirmation, students also affirmed classmates' stories such that students developed empathy for other students (Perez et al., 2021). Such affirmation enhances a connection between instructor and student and between students and other students in a classroom (Perez et al., 2021), further creating a sense of community and belongingness for students.

Next, in addition to the instructor's affirmation of students' personal stories, instructors ask follow-questions about students' personal stories (Benmayor, 2008; Prihatsanti et al., 2020). Such follow-up questions included the provision of self-reflection prompts (Benmayor, 2008; Georges, 2020): (a) what did you feel when you were in this situation? (b) what do you know about your life now? What did you learn from the situation? (c) how can others learn from your experiences? Follow-up questions like these encourage students to reflect on and revisit their prior experiences (Georges, 2020), potentially deepening their understanding of those events and changing how they see themselves (Chandler, 2002, Perez et al., 2021). This is not only beneficial for storytellers, but also for active listeners to improve problem-solving competencies by learning how people resolve their problems or difficulties (Prihatsanti et al., 2020).

Third, instructors facilitate students in interpreting instructor's critical feedback. Covarrubias and Laidug (2022) addressed the importance of students' interpretation of an instructor's critical feedback. They found that when an instructor provides critical feedback about a student's story structure, for example, some students may react in unhelpful negative ways (e.g., students may interpret that an instructor considers themselves foolish). Hence, it is important to provide students opportunities to interpret the instructor's critical feedback in more constructive ways.

Some instructors encourage students to provide feedback to one another (i.e., peer feedback), including asking clarifying questions about personal stories (Enrlich et al., 2020) and sharing what they like and what they remember from peer's stories, without providing any negative critical comments (Chandler, 2002). Such positive peer feedback helps open up students' vulnerability, which can be ultimately transformed into pride (Benmayor, 2008).

Finally, instructors further encourage students to relate others' stories to their personal experiences (Benmayor, 2008; Prihatsanti et al., 2020). Doing so gives students an opportunity to connect with others through learning and empathy. Indeed, a direct quotation from Benmayor's (2008) work captures this sentiment: "I can really relate to that story because the same thing [or something similar] happened to me".

Instructor Building a Psychologically Safe Learning Environment

Additionally, two pedagogical approaches corresponding to the theme, instructors building a psychologically safe learning environment, were identified in this systematic review. For one, instructors share their own personal vulnerable stories with students to establish trust and credibility (e.g., role modeling vulnerability, Kelly & Bhangal, 2018; Georges, 2020). This practice is often used in story-driven learning activities designed to challenge dominant norms with minoritized identities.

For another, instructors strive to establish trust and build relationships with and between students such that students feel a sense of belongingness to a community. Methods to promote this included: (a) intentionally praising the way students resolve a difficult situation in their lives (Perez et al., 2021), and encouraging students (b) to intentionally provide *positive* feedback to other students' stories, without critique (Chandler, 2002; Perez et al., 2021), (c) to share how a story resonates with other students' stories (Perez et al., 2021), and (d) to actively listen and show a sense of respect to others (Chandler, 2002; Lunn et al., 2023). Moreover, Landrum et al. (2016) proposed that story prompts, potentially reflecting unusual or memorable content, should respect the ethical boundaries of students to avoid causing them discomfort and pain.

RQ4. How have scholars approached studying the impact of story-driven learning on students learning in higher education?

We broadly identified research design types, instrument, sample sizes, disciplines, and outcome variables examined by researchers who studied the impact of story-driven learning on student learning in higher education.

Research Design

Among the 37 articles, six (16%) are theoretical or conceptual and 31 (84%) are empirical. Among 31 empirical studies, scholars have adopted various research designs: quantitative (e.g., experimental design), qualitative (e.g., case study, phenomenological study), and mixed-method studies. See Table 1.

Table 1

Types of Research Design (n = 37)

Type	Details	n (%)
Theoretical/Conceptual studies		6 (16%)
Empirical studies		31 (84%)
Quantitative study (*n* = 14)	• Experimental design	10
	• Quasi-experimental design	2
	• Non-experimental design (e.g., comparative, correlational)	1
	• Randomized controlled study	1

Qualitative study (*n* = 12)	• Case study (e.g., interpretive case study, single case study)	6
	• (Systematic) literature review	2
	• Phenomenological study	2
	• Appreciative inquiry	1
	• Formative evaluation	1
Mixed-method study (*n* = 4)	• Mixed-method study	4
Other (*n* = 1)	• Interactive session workshop	1

Instrument

We reviewed the types of instruments used for empirical studies. For the quantitative studies, self-reported measures and analysis of linguistic features in students' writing were primarily used. For the qualitative studies, interviews with instructors and students, analysis for writing (i.e., emerging themes in students' writing), reviewing literature, and classroom observations were employed. Moreover, self-reported measures, interviews, observation, and students' digital diaries were used for the mixed-method studies. See Table 2.

Table 2

Instrument (n = 31)

Type	Details	n
Quantitative study	• Self-reported measures	12
	• Analysis for writing (e.g., linguistic features in writing)	9
	• Other (e.g., employer assessment about leadership)	1
Qualitative study	• Interview	7
	• Analysis for writing (e.g., themes)	3
	• Literature	2
	• Classroom observation	1
	• Other (e.g., student perspective about story assignment; teaching materials)	3
Mixed-method study	• Self-reported measures	2
	• Interview	2
	• Observation	2
	• Other (e.g., salivary specimen; digital diary)	2
Other	• Interactive session	1

Sample Size

We reviewed 31 articles to identify sample size variation across empirical studies. We found sample size in the range of 10 to 50 people to be the most frequent, followed by the range of 51-100 people. However, some articles did not explicitly address or report the sample size examined, but rather a location unit (e.g., one introductory course) or a vague description of sample size (e.g., multiple students). See Table 3 for a summary.

Table 3

Sample Size (n = 31)

Sample Size Range	n	By Research Design				Note
		Quan	Qual	Mixed	Other	
1~10	2	-	2	-	-	-
10~50	11	4	5	2	-	
51~100	6	6			-	
100~	5	4	1	-	-	
Varying	2	-	2	-	-	Review empirical articles
Not explicitly reported	4	-	2	2	-	e.g., One introductory course; Multiple students
Not reported at all	1	-	-	-	1	Interactive workshop

Disciplines

In a higher education context, story-driven learning has been adopted in several disciplines. Broadly, such disciplines included: STEM education, non-STEM education, and general education. STEM was the most common discipline category to use story-driven learning (*n* = 20, 54%). Second most frequent were General Education, aiming to improve student career identity, empathy, leadership, and collaboration skills. (*n* = 15, 41%). Only 1 paper reported the use of story-driven learning in a non-STEM discipline (*n* = 1, 3%). See Table 4.

Table 4

Disciplines (n=37)

Disciplines	n(%)	Examples
STEM	20 (54%)	Medical education, Engineering, psychology
General Education	15 (41%)	Career identity, Empathy, Collaboration, Leadership, College transition
Non-STEM	1 (3%)	Humanities
Both STEM and non-STEM	1 (3%)	-

Outcome variables

We were also interested in what outcome variables scholars have studied when examining the effects of story-driven learning pedagogies. Among 37 articles, we reviewed 27 articles, which means 10 articles were excluded from the review in that those were either theoretical/conceptual articles or summaries for interactive workshops, not including outcome variables. The outcome variables we identified were: (a) mental health and well-being, (b) psychological factors, (c) learning, (d) linguistic features in writing (to identify student mood and mental health), (e) identity, (f) physical health or physiological measures, and (g) career skills. See Table 6.

Table 5

Outcome Variables (n=27)

Category	n	Category	n
Mental health and well-being		**Linguistic features in writing**	

• Life quality (e.g., during college transition) • Life satisfaction • Social functioning • Appreciation of life • Depression • Anxiety • Distress or stress level • Posttraumatic growth • Cortisol level	9	• Linguistic inquiry word count • Overall word count • Pronouns (e.g., I, we, you, other pronouns) • # of affective words (e.g., positive, negative, anger, or sad words) • Causal words • Insight words	5
Psychological factors • Psychological capital • Confidence • Sense of belonginess • Self-awareness • Empathy • Suppression of emotion regulation • Intrusive thoughts	9	**Identity** • Connection to self • Identity sense-making (including, as change agents)	5
		Physical health or physiological measure • Physician visits due to physical illness • Bodily pain • Blood pressure change	3
Learning • Student learning • Class engagement • Effectiveness of intervention (e.g., learning environment, learning process) • Importance of liberal arts education	6	**Career skills** • Leadership • Career identity	2

Limitations

We acknowledge that there are limitations to this study. First, although we used a variety of search keywords (e.g., personal narrative, storytelling, story, stories, expressive writing intervention) that were designed to comprehensively identify articles relevant to our study, it is possible that we missed some articles that would have met our criteria. Another limitation is our use of a single database. Despite the comprehensive coverage of Google Scholar (Gehanno et al., 2013; Martín-Martín et al., 2018), some publications might have been missed that would have been identified if other databases had been used (Boeker et al., 2013; Gusenbauer & Haddaway, 2020).

Conclusions

Taken together, this SLR provides insight into how story-driven learning has been used thus far in higher education. Articles featured ranged from theoretical, qualitative, and quantitative examinations concerning the role of storytelling in the classroom, showing a wide range in approaches to understanding story-driven learning and its student impact. Moreover, story-driven learning was used across a range of countries and educational disciplines.

Importantly, story-driven learning benefitted students in numerous ways, including by promoting a broad range of learning outcomes in all three domains of competence (i.e., Cognitive, Interpersonal, and Intrapersonal) identified by the National Research Council in their landmark 2012 report "Education for Life and Work": Although all three competencies are important to 21st century learners, most pedagogies focus on promoting cognitive competencies. This review shows that story-driven learning is an alternative pedagogical approach that expands the kinds of learning outcomes that can be targeted and that emphasizes students' holistic personal and professional development.

While story-driven learning has been implemented in multiple higher education contexts, such efforts have been almost exclusively small-scale interventions (i.e. individual courses, one-off lesson plans). No studies featured large-scale, systematic implementations of story-driven learning. This represents a missed opportunity: the fact that the studies that have been conducted show significant positive impacts on students, implies that story-driven learning, if implemented at scale, would have substantial positive impacts on students in higher education. We encourage educators to reflect on the potential of incorporating lived experience into pedagogy and how to best apply story-driven learning into their educational design.

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Appendix A. Search Query in Google Scholar

#	Search Keywords
1	with **all** the words: engineering education with **at least one** of the words: narratives storytelling stories story
2	with **all** the words: psychology education with **at least one** of the words: narratives storytelling stories story
3	with **all** the words: STEM education with **at least one** of the words: narratives storytelling stories story
4	with **all** the words: storytelling narratives with **at least one** of the words: education college university
5	with **all** the words: storytelling pedagogy with **at least one** of the words: education college university
6	with **all** the words: storytelling intervention with **at least one** of the words: education college university
7	with **all** the words: expressive writing intervention with **at least one** of the words: education college university
8	with **all** the words: STEM storytelling with **at least one** of the words: education college university
9	with **all** the words: engineering storytelling with **at least one** of the words: education college university
10	with **all** the words: psychology storytelling with **at least one** of the words: education college university
11	with **all** the words: STEM storytelling intervention with **at least one** of the words: education college university
12	with **all** the words: engineering storytelling intervention with **at least one** of the words: education college university
13	with **all** the words: psychology storytelling intervention with **at least one** of the words: education college university
14	with **all** the words: STEM storytelling pedagogy
15	with **all** the words: Engineering storytelling pedagogy
16	with **all** the words: Psychology storytelling pedagogy
17	with **all** the words: STEM narrative intervention with at least one of the words: education college university
18	with **all** the words: engineering narrative intervention with **at least one** of the words: education college university
19	with **all** the words: psychology narrative intervention with **at least one** of the words: education college university
20	with **all** the words: storytelling narrative with **at least one** of the words: college university **without** the words: secondary elementary disability ESL disorder
21	with **all** the words: storytelling personal narrative with **at least one** of the words: college university **without** the words: secondary elementary disability ESL disorder
22	with **all** the words: storytelling pedagogy personal narrative with **at least one** of the words: college university

	without the words: secondary elementary disability ESL disorder
23	with **all** the words: stories curriculum pedagogy personal narrative with **at least one** of the words: college university **without** the words: secondary elementary disability ESL disorder
24	with **all** the words: storytelling classroom narrative with **at least one** of the words: college university **without** the words: secondary elementary disability ESL disorder
25	with **all** the words: story narrative with **at least one** of the words: college university **without** the words: secondary elementary disability ESL disorder
26	with **all** the words: story classroom narrative with **at least one** of the words: college university **without** the words: secondary elementary disability ESL disorder
27	with **all** the words: narrative education classroom university with **at least one** of the words: story stories
28	with **all** the words: narrative education classroom university with **at least one** of the words: story stories **without** the words: childhood secondary elementary ESL EFL TESOL disorder disability
29	with **all** the words: narrative education classroom university with **at least one** of the words: story stories **without** the words: ESL EFL TESOL
30	with **all** the words: narrative classroom university with **at least one** of the words: story stories **without** the words: ESL EFL TESOL
31	with **all** the words: storytelling classroom university with **at least one** of the words: story stories narrative **without** the words: ESL EFL TESOL
32	with **all** the words: storytelling classroom university with **at least one** of the words: story stories narrative **without** the words: ESL EFL TESOL
33	with **all** the words: storytelling classroom university engineering with **at least one** of the words: story stories narrative **without** the words: ESL EFL TESOL