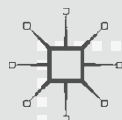


**DIGITAL  
EDUCATION  
AND LEARNING**

# **EDUCATION, NARRATIVE TECHNOLOGIES AND DIGITAL LEARNING**

**DESIGNING STORYTELLING FOR  
CREATIVITY WITH COMPUTING**

**TONY HALL**



# Digital Education and Learning

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Tony Hall

# Education, Narrative Technologies and Digital Learning

Designing Storytelling for  
Creativity with Computing

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macmillan

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Digital Education and Learning

ISBN 978-1-137-32007-0

ISBN 978-1-137-32008-7 (eBook)

<https://doi.org/10.1057/978-1-137-32008-7>

Library of Congress Control Number: 2018938393

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Cover illustration: almagami / Alamy Stock Vector

Printed on acid-free paper

This Palgrave Macmillan imprint is published by the registered company Macmillan Publishers Ltd. part of Springer Nature.

The registered company address is: The Campus, 4 Crinan Street, London, N1 9XW, United Kingdom

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# 1

## The Age of Autobiography and Narrative Technology

### Introduction

Increasingly, technology seems to be used narratively in society, for example, the storying of self through social media. This chapter locates the research outlined in the book in the contemporary and prevailing, socio-narrative context, or Age of Autobiography. The chapter provides a definition of narrative and outlines its foundational role in education, drawing on key contemporary debates and themes concerning the salience of storytelling in learning and teaching. This discussion leads into an introduction to narrative technology, which is defined according to two broad types: intrinsic and extrinsic. Intrinsic narrative technology can be used to refer to digital tools created with a bespoke storytelling purpose, for example, animation, micro-blogging and social media. Extrinsic narrative technology describes those digital tools that—although perhaps not expressly originally designed for storytelling—can be appropriated or repurposed to support engaging and powerful narrative design of learning. The chapter illustrates narrative technology in action, and how it can be deployed in different learning contexts to enhance learner engagement and creativity.



## The Creative Educational Potential of Narrative and Storytelling

In a book concerned with creativity, storytelling, technology and educational design, a good point at which to start is consideration of one of the foundational tenets of our discussion: narrative and its essential and powerful role in education. And where better to start, perhaps, than a story about narrative in the classroom.

In his brilliant autobiographical novel, *Teacher Man: A Memoir* (2005), wherein he recounted his career as a teacher in America, the writer Frank McCourt reprised humorous and insightful memories of his time in the classroom, including his often-inspired efforts to motivate his students and maintain their interest. Many teachers will be able to relate to McCourt's narrative, owing to its universality; every teacher faces the challenge, every day, of trying to engage their students with the subject they are teaching, despite students sometimes (or frequently) not wanting to engage, often with topics or subjects they might consider unrelated, and thus unimportant in their prevailing discourse and everyday lives. However, as well as the relatable, universal qualities of McCourt's classroom stories, we also find them humorous and engaging, precisely because they surprise and delight us. In addition to being conventional and thus recognisable by any teacher, the narrative of McCourt's classroom is—as we will presently discuss—exceptional and entertaining, and represents instruction that is different from that which teachers might normatively do in their classrooms.

We will return to this central theme in the book—what we might call the Brunerian perspective, predicated on the ideas and writings of the late educational psychologist, Jerome Bruner (1915–2016), particularly his conceptualisation of the educational potential of narrative and storytelling. The Brunerian perspective posits that narrative mediates our creativity by dually affording a common and shared, known structure for human experience—bestowing a sense of the commonplace and everyday—while concomitantly affording potential for exceptionality and particularity. This dynamic—between ordinariness and exception—is an inherently powerful aspect of narrative, which can serve to evoke, exercise and excite our imagination and creativity.

Returning for the moment to Frank McCourt's classroom: during his career as a teacher after the Second World War, McCourt taught in different types of schools, including those where very challenging socio-economic conditions predominated. Typically, in the latter, education was not valorised outside the formal pedagogical setting of the classroom.

McCourt found it especially difficult to teach the key skills of writing; indeed, it traditionally represents one of the toughest areas—of any elements in the syllabus—for teachers and their pupils to engage with. However, as we know, writing represents one of the four key activities underlying all literacy and language learning. It is thus a crucial dimension of any classroom, and indeed of any educational setting where language and literature are being taught.

McCourt was finding it a challenge, if not impossible, to encourage his students to undertake written tasks, indeed to write anything at all. Further, it was not only during class-time that students were reluctant to engage. His pupils very rarely, if ever, completed and turned in the homework assigned to them. Indeed, to avoid doing homework, students would contrive and offer all kinds of imaginative stories, often written up as forged excuse notes. Passed off as authored by their parents, they would even claim in these excuse notes that some major catastrophe had befallen them, which had resulted in the destruction of what would otherwise have been complete and perfect homework. Of course, these were invariably fictions intended to distract the teacher and avoid, at all costs, the apparent drudgery of homework. Nonetheless, in composing these narrative artefacts, students were evidencing creativity.

On a more fundamental level, they were writing creatively—exactly the activity that McCourt was finding hard to encourage and support through more traditional teaching methods in the classroom.

McCourt's pupils would produce the most wonderful, creative and imaginative excuse notes so that they did not have to turn in homework: "How could I have ignored this treasure trove, these gems of fiction and fantasy? Here was American high school writing at its best—raw, real, urgent, lucid, brief, and lying" (Mccourt, 2005, p. 85).

For example, one of the fanciful excuse notes read: "Her big brother got mad at her and threw her essay out the window and it flew away all

over Staten Island which is not a good thing because people will read it and get the wrong impression unless they read the ending which explains everything” (McCourt, 2005, pp. 85–86). Another of the notes implied that homework composition, bravely attempted under serious duress, had potentially created risk of deprivation of liberty: “We were evicted from our apartment and the mean sheriff said if my son kept yelling for his notebook he’d have us all arrested” (McCourt, 2005, p. 86).

Comedy, literariness and fictional ingenuity, all evidenced in the excuse notes produced by his students, who were otherwise struggling to write and express themselves creatively: “I was having an epiphany. Isn’t it remarkable, I thought, how the students whined and said it was hard putting 200 words together on any subject? But when they forged excuse notes, they were brilliant. The notes I had could be turned into an anthology of Great American Excuses. They were samples of talent never mentioned in song, story or study” (McCourt, 2005, pp. 84–85).

The idea thus occurred to McCourt that perhaps excuse notes could be used as a pedagogical stratagem—in class—to encourage his pupils to write, engage and be creative. What if this traditionally ‘anti-educational’ narrative artefact could be used productively for educational purposes? Consequently, he had his students write excuse notes for famous characters in history.

The strategy works well pedagogically because a natural location for a sequel to any literary or historical tragedy would be a courtroom, where the plaintiff and defendant’s stories are heard, adjudged and sentence duly passed.

Indeed, a suggested modern method for teaching dramatic texts, for example, Shakespeare and other areas of the English curriculum—especially those with a strong narrative design, for example, novel, short story, is to simulate a courtroom, where the protagonist and antagonist stand trial, and must answer for the consequences and implications of their fateful actions. It is suggested as an interactive and critical way to explore—with students—key literary issues like the Shakespearean ‘Tragic Flaw’, natural and tragic justice, and the moral implications of characters’ respective decisions and actions.

The simulated courtroom and its accusatory-excusatory dyadic provide a creative context to promote and represent the student voice, in which

connections can be drawn between the opinions and views of pupils and the moral of the stories and morality of the characters on trial.

Combining his students' avowed creativity as authors of elaborate excuse notes with the need to find ways to engage them more effectively in class, the idea to encourage his student's written creativity through composing excuse notes was an especially innovative and—at the time, reflecting on it now—a prescient approach to teaching English.

As well as engaging his pupils more effectively, creatively and imaginatively in writing, indeed in encouraging them to write anything at all, the innovation also highlighted the importance and potential of narrative and storytelling in education, learning and teaching.

Although imaginary and purposefully fictitious, Frank McCourt's pupils were making meaningful connections between an autobiographical and creative narrative format that was familiar in their own lived experience, and which they had become conversant at—the forged excuse note—and areas of the curriculum that probably, previously seemed inaccessible and irrelevant to them.

In our highly mediated and networked world today, the narrative mode of autobiography has emerged as a principal communicative and creative aspect of how we engage with technology. Many of the technologies we use in our homes and schools are predicated fundamentally on narrative and autobiography. The 'storying of self' has become a *de facto* means by which people use technology to collaborate and communicate in contemporary society.

A prime example is Facebook, which is a socially mediated, collaborative technology based fundamentally on autobiography—a means for people to author and narrate digitally their own stories, interests and perspectives.

Many of the features of Facebook are expressly autobiographical, for example: the bespoke Your Story button and functionality. Indeed, it is interesting to note also the recent redesign of Facebook, which aims to augment the technology's autobiographical design by focusing more on personal stories, rather than news items, in users' news feeds (The New York Times, 2018).

Micro-blogging is also autobiographical in design, often used for the expression and sharing of personal moments and perspectives.

In the 1950s, Frank McCourt drew on the potential of the autobiographical narrative artefact of the excuse note to support creative writing among his pupils, and today we use autobiographical, social media tools, for example, Facebook and Twitter, to communicate ourselves and our identities, and to connect with others.

As McCourt utilised the potential of the excuse note, we can also creatively deploy narrative and autobiographical technologies in education today, to support collaboration, communication and creativity.

So, what are the implications for educational technology design in this apparent Age of Autobiography? Further, how can we utilise the biographical and narrative potential of new technologies for learning, teaching and assessment, in a spirit of educational innovation akin to that demonstrated by Frank McCourt in his contemporary use of the excuse note?

In this opening chapter, we will clear the ground for looking at the design of narrative technology in education by first considering the salient features of narrative and how it effects and maintains a profound impact as a foundational conceptual and communicative construct in education, learning and teaching.

## **Education as Narrative Process and Product**

Why is it that narrative and storytelling are so important in education, throughout all aspects of learning, teaching and assessment?

What are the key features of narrative that define and illustrate its educational potential and purpose?

In this exposition of narrative as a salient educational construct, we will engage with a range of converging and contrasting views of the educational import of storytelling, especially as it is construed and applied in the fields of educational psychology, educational philosophy and narrative theory.

Before exploring the literature relating to narrative as a construct that is fundamentally central to education, it might be helpful to define what we mean by narrative and how it compares and contrasts with concepts of story and storytelling.

Thus, what is our epistemology of narrative? What are its distinctive characteristics and features as an area of importance and potential for human creativity and learning? And what is narrative's epistemic relation to story and storytelling?

Etymologically, narrative ostensibly emerged from the Latin word *narrativus*—‘telling a story’; narrative is thus originally connoted with ‘story’ as an abridgement of, and a move to personalise, the word ‘history’.

However, the origins of narrative and storytelling are still more ancient.

Fisher (1985, p. 5) noted the original, historical importance of narrative in the earliest emergence and development of human civilisation: “In the beginning was the word, or more accurately, the *logos*. And in the beginning, *logos* meant story, reason, rationale, conception, discourse, and/or thought.” Furthermore, Fisher highlighted the epochal ubiquity of narrative across human endeavour and enterprise, activities and experiences: “All forms of human expression and communication—from epic to architecture, from biblical narrative to statuary—came within its purview.”

Fisher's seminal work on narrative exemplifies how our crafting of narratives and sharing of these stories has traditionally been synonymous with how we mediate and understand our culture and technology—with the very foundations of human thought and creativity. This theme resonates in educational psychology and philosophy today. A key theme of education today, and of educational philosophy and psychology in particular, is wellbeing or *flourishing* (Seligman, 2011). Narrative represents a significant part of contemporary discourses and research on mental health and wellbeing—indeed narrative methods are frequently employed as a principal form of modern psychotherapy (White & Epston, 1990).

Taking up and expanding further the point about narrative and mental wellbeing, a very significant contemporary development in psychology, particularly mental health and the therapies, is the emergence of positive psychology. One of the most popular framings of positive psychology today is Seligman's PERMA (2011) framework, which defines positive disposition and wellbeing as founded on five key pillars: *positive emotion, relationships, accomplishment, engagement* and *meaning*. These five salient areas of life are considered mutually interdependent in individual and collective happiness.

One of the founding developments in the origins of this important field of psychotherapeutic practice and research was the work of Viktor Frankl, an Austrian doctor and Holocaust survivor. The need for meaningful pedagogy, which contributes to positive self-narrative and ideas of our worth and capabilities, is particularly important in the current educational context and society, where mental health issues and the imperative to address them effectively are of urgent concern.

An example is the recent reform of the Junior Cycle (12–15 years) Curriculum at post-primary level in Ireland, which places the student's wellness at the heart of a new, revised syllabus. This reform of the entire junior school approach at secondary level aims to promote learning and skills that are more oriented to what young people need to be well-adjusted and successful in life; an attempt to de-privilege the historical overemphasis on rote learning for summative, terminal state examinations. Subjects such as social, personal and health education and physical education have been integrated together to try to foreground and provide a more coherent and sustained approach to young people's emotional and social wellbeing.

Some of the highly influential early works on positive stories of self or noögenic narrative originated with Frankl's magnum opus, *Man's Search for Meaning*, originally published in 1946.

Viktor Frankl's research and writing emerged to international acclaim after the Second World War, and achieved particular prominence in the 1960s, during times of significant social change and tumult in the US and internationally.

Frankl's central concern in his work was to answer the question, what is the meaning of our life-story, our ontogenetic narrative? Does it have a meaning, a purpose, a creative orientation? Also, when inevitable disjunctures and tensions arise in that narrative, what are we to do? How can we deal with the inevitable failures and frustrations of life—the plot breakdowns in our autobiography, which upset the cogence and coherence of our life-narrative?

Frankl asserted that challenges, difficulties and problems are all inevitable in life. He did not mean to argue that we should necessarily seek out hardship for ourselves, but when it unavoidably arises, our attitude is key. Frankl's particular area of interest in framing a positive psychology of life

was existential crisis: when the narrative of our life seems only to evoke hopelessness, what he termed *noögenic neurosis*.

Frankl asserted that psychic trauma and concomitant noögenic neurosis arise due to fractures in the logos of our lives, or our logocentric sense of self, that is, a loss of meaning (logos/narrative) and feelings of hopelessness that can accompany this. Frankl argued that even in moments of total despair and apparent hopelessness, there is still meaning. He contended that even in our moments of greatest challenge, it is our fundamental, defining and shared characteristic to choose our attitude to our fate—our unique human quality to turn a tragedy into a triumph.

For Frankl, the key role of the therapist is not to narrate or tell the patient the meaning of their lives, but rather to help them to uncover it for themselves, potentially using alternative narratives and points of view, including humour to help the person experiencing noögenic neurosis to find the idiosyncratic, unique meaning of their life-story; as Frankl would say, to help the patient—in a clinical setting—to see the meaningfulness of their lives, even when they are experiencing trauma or living through a difficult or challenging, even seemingly intractable, problem or situation. Life is thus conceived of as a noögenic narrative—an incontrovertibly purposeful autobiography—where meaning is omnipresent, even when we are faced with the most difficult of challenges or potentially unresolvable issues. Frankl argued that even when the conditions or circumstances we find ourselves in appear hopeless, there is always meaning. We just need to seek and to see it; and the right narrative, at the right time, can be crucial in all this.

Frankl proposed a positive-oriented, narrative approach to life and education, which he called *Logotherapy*, and which focused on seeking meaningfulness, even when we are faced with the most difficult or dire situations in life. As we will presently explore in the next chapter, the contemporary design of educational innovations and technologies normatively has two outcomes or impacts—*proximal* and *distal* (McKenney & Reeves, 2012).

Firstly, a design or innovation effects impact on a local or proximal level, evidenced by the narrative or story of an educational experience over time, which enumerates a process of learning and illustrates for the reader how this process unfolded; how it affected learners and impacted



positively on their learning and how it and might be repeated and/or replicated. The contribution of the design with educational technology—its story and impact on learners over time—is a significant research contribution as it provides a detailed narrative blueprint for others who would like to develop educational technology to achieve similarly innovative impacts in their respective contexts of learning.

Secondly, in educational design research (EDR), by reflecting on our local achievements with educational technology in the broader theoretical context, we attempt to make an ontological contribution to the advancement of the broad ‘science of learning’—corroborating or challenging extant concepts and theories of learning through critical analysis of the data emerging from our local innovations and interventions. This is the distal contribution of EDR, and typically results in the development of bespoke models or frameworks for the principled design and evaluation of technology-enhanced learning.

As we will discuss in Chap. 2, these frameworks are typically comprised of criteria, guidelines and principles to help orient and inform ensuing or subsequent research with similar educational technologies in cognate contexts. EDR achieves its contribution to research in educational technology by providing detailed examples of innovations and their local impact on learners (proximal) alongside broader, ontological or theoretical insights into learning with technology in context (distal).

Frankl’s book represents a significant contribution along the two planes of impact, as construed in EDR: the proximal (practical) and the distal (theoretical).

The book is broken into two parts: the first, a compelling narrative of his experiences as a doctor in pre-war Austria and his deportation to the death camps; the second, his theorisation of meaningful existence and noögenic narrative, even when we are faced with the most problematic of speed bumps and roadblocks, which life will inevitably throw in our path.

If we construe or see life as a story or narrative—with different characters, themes, dramatic tensions, dénouements, emplotments and so forth—then what is the meaning of that story? Frankl outlined three ways in which we can find meaning and purpose in life, even when our circumstances appear utterly hopeless:

1. through accomplishment/achievement—by completing a task or doing a deed;
2. through recognising another person's or other people's unique potential and helping them to realise that potential; and
3. perhaps most crucially, through the attitude we take towards unavoidable suffering.

Alongside contemporary narrative conceptions of life and meaningful existence, including noögenic narrative, storytelling and narrative methods are among the most popular means of helping people experiencing what Frankl would term existential crisis or noögenic neurosis.

Bruner (2002), one of the key thinkers in the narrative psychology of mind, human development and learning, echoed Frankl, particularly in respect of the importance of a positive attitude to life. He noted the risks of narrative therapy, if therapeutic practice, especially our stories of self become caught in, and reflect a negative conception of selfhood. When this happens, rather than providing a help to us, narrative therapy—when the story of self and our lives becomes subsumed in circular, self-proliferating and overly critical and negative rhetoric—can actually prove unhelpful, even damaging. It can in fact cause deeper, more prolonged anguish, rather than helping us to find acceptance and appreciate the meaning of our human suffering. Therefore, the positive framing of the life-story as a coherent, noögenic narrative can be crucially important in helping us to find meaning when life challenges us with its unavoidable failures and frustrations.

Beyond its importance to the education and wellbeing of the individual, educational designers and researchers are deploying narrative methods to involve key stakeholders inclusively and meaningfully in all areas of educational change and innovation, including school building design and the architecting and building of innovative physical environments for learning and teaching. Recent research has employed storytelling—biographical and auto-ethnographical methods—to elicit and frame teachers' experience of their classrooms and changes to these learning spaces over time, and how this particularly has impacted upon their teaching practices and their pupils' educational experiences (Tondeur, Herman, De Buck, & Triquet, 2017). The rich data elicited from these

stories spanning teachers' entire careers in classrooms are being used to inform conceptualisation of the design of innovative contemporary school buildings and physical learning spaces. What is furthermore interesting about this use of narrative is that it highlights how storytelling is ubiquitous as a tool for research and development in education, from the immediate local educational experience and wellbeing of the individual pupil right up to how we architect and build the physical environments in which their learning takes place.

Narrative is fundamentally central to education; as Kieran Egan's (1989) ground-breaking work on the subject outlines, good teaching *is* good storytelling. Egan contends that we can augment our design of our lessons and teaching by directly drawing on the dramatic potential of storytelling. Egan argues that in each subject domain in the curriculum, there are dramatic questions, and teachers can effectively engage learners' imaginations by tapping into and utilising this narrative potential that is extant in each and every subject in the curriculum. The teacher's role, in engaging their students, can be made much easier if they can identify and make use of this storytelling potential throughout their lessons. Frank McCourt exploited the creative potential of storytelling through using the narrative innovation of the excuse note as a strategy to create engagement and facilitate creative writing by his students.

In respect of narrative research more broadly, Speedy (2008) has described how researchers are developing new genres of research that seek to make ordinarily silenced, unspoken or contested knowledge visible, and thus actionable and transformative. Consequently and importantly, narrative research can entail alternative and creative conceptions of research methodology, including poetical, performative and processual approaches that offer the potential of novel insights, including the transgressive and emancipatory. This is centrally important, for, as Riessman (2008) outlined, subjectivity is inherently dynamical and fluid, and mediated through the stories and narratives people tell themselves, and others, about who they are. Crucially, salient and essential aspects of human subjectivity are often latent in our silences, as well as explicated in our shared expressions. Narrative methodologies—including artistic and poetical modalities—can help to surface and highlight key dimensions of the subjective self (Clandinin & Connelly, 2000), and thus support us to challenge prevailing and problematic hegemonies.

In education, the import of narrative, and the stories we construct and share has recently become further highlighted in the tension between so-called small and big data concerning pupil learning, numeracy and literacy in schools internationally. Aggregated and large data sets, for example, PISA and TIMSS, typically receive significant political and media attention; however, the stories of success at the level of the local can often be glossed over and underreported/underrepresented. There is so much indispensable knowledge to glean about educational innovation and achievement through the local narratives of classrooms and schools, which has led key educationists to note the imperative that we balance the big data with these so-called small data (Sahlberg & Hasak, 2016); not to do so entails we miss out on understanding what truly constitutes excellent educational practice.

## The Narrative Mode of Thought

Therefore, when we consider its primordial origins and importance across human intellectual and social endeavour, how are we to construe what narrative entails, and how might we interpret its meaning for our purposes in defining and exploring the conceptualisation, design and evaluation of narrative technology in education?

For the purposes of this book, we will consider narrative to be generally synonymous with story and its gerund, storytelling. Further, in common parlance today, we also have the transitive verbal form of narrative: to narrativise, and to story (or storify), which means to create a narrative or story—to place experiences and event(s) in narrative or story-form.

An additional term in modern usage, mostly in the academic community, is narratology, which can be defined as the systematic study of story/storytelling in different fields, for example, education, psychology, the health and therapeutic sciences, and literature.

This book aims to make a contribution to the narratology of design for educational storytelling, particularly the conceptualisation, design, deployment and evaluation of narrative technologies in different contexts of learning, formal and informal.

The contiguity of chronology, sequence and time are central in storytelling. When we conceive of narrative or story, it typically has a normative or archetypal logic and structure.

There is a beginning and, or backstory, a context in which happenings will be suggested, described and located. There usually ensues further exposition of the initial setting or suggestion of context, which adds further detail to the development of the story, which then ultimately leads to a climax and/or denouement of conflicts, issues or tensions. Even when we are being told an emotive story by someone who is upset, where they struggle to convey what has happened, we might ask them for some context, to go back to the beginning. We are attuned to, and highly familiar with, a normative structure in narrative/story—the beginning, middle and end.

In film and screenwriting, in concert with the *mise-en-scène*, the physical features and location, which add so much colour and feeling to the filmic story, three-part narrative is a common story structure. This fundamental story architecture encompasses a ternary of interdependent elements or stages: (1) the setup, (2) the confrontation and (3) the resolution.

Therefore, narrative is normatively chronological and sequential—including when it is emplotted in a non-linear fashion. There is an inherent time-ordered structure and sequence that—to borrow the language of film—temporally frames the story.

For example, when relating a narrative or story of an event, a story that reprises an event that happened last week, the narrator will typically outline the location, time, sequence of events, their actions and/or those of others—the apparent ordering and unfolding of things.

Even where the story of past events is related in a discordant or disordered fashion, there is a notional temporal arrangement to proceedings; the time and sequence of related matters, and their expression, are canonically essential to narrative and storytelling.

As Fisher outlined, the original development and use of story was for meaning—the mediation of the *logos*.

Interestingly, modern thinking on the nature of meaning in human learning and psychology, particularly in relation to mental health (e.g. Frankl), has reaffirmed, or returned to, the fundamental concept of the