

Anita Lanszki

DIGITAL MEDIA AND STORYTELLING IN HIGHER EDUCATION



L'Harmattan

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Digital media and storytelling in higher education

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Kultúrakutatás, kulturális sokféleség / Cultural studies, cultural diversity (12950),
Kommunikációs hálózatok, média, információs társadalom / Communication networks,
media, information society (10104), Pedagógia / Pedagogy (12910)
narratív szemlélet, neveléstudomány, pszichológia, médiatudomány, digitalizáció
narrative approach, education, psychology, media studies, digitization

ISBN 978-963-646-291-8 (pdf)

DOI: <https://doi.org/10.56037/9782140306969>

Open Access

<https://openaccess.hu/>

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L'Harmattan

Paris, 2022

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ISBN 978-2-14-030696-9

DOI: <https://doi.org/10.56037/9782140306969>

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The publication of the book was made possible by the Ministry of Innovation and Technology with the support of the National Research Development and Innovation Fund through the project MEC_K 141202, funded by the Mecenatúra 2021.

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Preface

At first glance, the book *Digital Media and Storytelling in Higher Education* connects three distinct entities. The aim of the volume is to present the typical narrative forms of the information society, as well as the areas of research and education in which the analysis and creation of narratives can be utilized in higher education.

The book is divided into five major sections. In the first part, storytelling is examined with the help of scientific approaches and definitions from different disciplines. In the first chapter, the role of storytelling in human cognition, memory, and interpersonal communication is explored through approaches from cultural, narrative, cognitive, and evolutionary psychology. The second chapter examines the structure and functions of narrative texts with the help of narratology, an interdisciplinary discipline in itself. The third chapter of the first part reviews the characteristics of storytelling through technical media. The first part of the book uses different disciplines to define the conceptual framework by which the narrative feature of cognition and cultural knowledge transfer can be interpreted in a complex way. Narrative, narration, narrator, representation, fabula (story), and syuzhet (plot) are definitions that help to understand the connections and phenomena described in the rest of the volume.

The second part of the book presents the characteristics of the new storytelling conventions of the information society. The first chapter focuses on how digital narrative conventions have been transformed in the first decades of the 21st century by the emergence of smart devices and web 2.0 platforms; in addition, phenomena such as media convergence, hypertextuality and participatory storytelling are characterized. The second chapter explores the 21st century's modular and interactive transformations of the traditional audiovisual narrative expressions of the 20th century. These new storytelling practices are then presented and adapted to the complex media environment of the 21st century: transmedia storytelling which is a multimedia form of plot extension; interactive storytelling, which turns the recipient into an interactor who can influence the plot; data-driven storytelling, which is a complex and dynamic form of narrative data visualization; and digital storytelling, which can take the form of individual and participative content communication and self-representation.

The third part discusses in eight chapters how narrative structures can be used in higher education research. In the first chapter, the use of life narratives as primarily sources is presented, and in the second chapter, measurement tools for the (impact) analysis of narratives, especially literary and film narratives, are discussed. The following chapters focus on the third area of research, namely that which examines storytelling as an art-based participatory research method and considers both the research process and the narrative product as objects of analysis. In separate chapters, the book discusses the relevance of oral history and digital storytelling research in the historical disciplines and presents digital storytelling as participatory action research. This section also includes empirical research on the developmental impact of video games, and netnography is also introduced as a new approach in the social sciences for studying narrative structures on the Internet and web 2.0 platforms. The third part concludes with a chapter exploring the ethical and legal dilemmas related to digital resources and research based on the use of digital tools.

The fourth part of the volume uses major learning theories and different learning models to show how storytelling in an integrated media environment opens up new dimensions of knowledge transfer in the 21st century. The first chapter interprets storytelling with digital tools primarily in terms of constructivist and connectivist learning theories, while the second chapter explores the impact of digital narrative creation on human cognitive and affective-emotional factors. The next three chapters interpret digital storytelling using Bloom's taxonomy, the SAMR and PICRAT models, and international frameworks (i.e., DigCompEdu, ISTE, and the 21st Century Skills Framework). The final chapter discusses the possibilities of integrating storytelling into MOOCs.

After exploring the general characteristics, the fifth and final section presents good practices that integrate the analysis and creation of digital narratives into the curricula of different fields of higher education. In this section, educators can also find ideas on how to integrate new storytelling conventions of the 21st century to update their methods and approaches to teaching business, humanities and arts in higher education, as well as in the social and health sciences. The book deliberately omits information technology from the discussion of educational fields, as it intends to demonstrate how non-professional users can take advantage of digital tools in research and teaching in higher education.

Part I.

Interdisciplinary Approach to Storytelling

Humanity's experiences and culture are transferred in stories from generation to generation. The German ethnographer Ranke (1967) and the American communication theorist Fisher (1984) labeled our species *homo narrans*, storytelling humans, because the narrative form of social knowledge transfer has proved to be a highly important factor in human evolution. Storytelling, however, is not only the secret of survival for humanity, but also an opportunity for entertainment and emotional connection. From cave paintings, tribal dances, folk tales, and campfire songs to confessions, gossips, medical anamneses, literary and cinematic narratives, we are surrounded by mimetic, visual and linguistic forms of storytelling every day.

The channels of communication have multiplied over time and storytelling remains an adaptive technique. Different disciplines explain the narrative aspect of human cognition and cultural transmission from different perspectives. Psychology focuses on the cognitive and emotional background of storytelling, narratology on the narrative and linguistic structure of narration, historiography and anthropology on its role in cultural transmission, while communication and media theory focuses on the impact of the nature of media on narrative creation.

CHAPTER 1.

PSYCHOLOGICAL APPROACHES

The link between psychology and storytelling is mainly seen in its therapeutic applications, especially in the autobiographical dialogues of psychotherapy and in the therapeutic use of stories and literary works. In addition to the practical use of storytelling, many sub-disciplines of psychology address the question of why the narrative form of knowledge transfer is so effective and liberating, and what role storytelling plays in human cognition, memory and communication.

1.1 Narrative and Cognition

Jerome Bruner (1986) distinguishes two modes of human thinking: paradigmatic and narrative. These two modes are two ways of organizing memories and experiences and constructing reality. Paradigmatic thinking is framed by rules, theoretical concepts, arguments and evidence, while the other way of thinking is through narratives. The different nature of the logic of the two systems is illustrated by Jerome Bruner through the logical proposition of “if x, then y”, and so “The king died, and then the queen died”. Paradigmatic thinking looks for factual truth in the statement, while narrative thinking is concerned with the relationship between two events, which, according to Bruner, can be grief, suicide or intrigue. Logical-scientific thinking is based on the ability to match empirical truth with verifiability, while the narrative mode is based on insight into the intentions behind the actions, as well as the twists and consequences in the stories. In a narrative, beyond the components of action – the world of situations, actions, actors, and means – there is another realm: the realm of the actor’s consciousness, through which the thoughts, emotions, motives, motivations and perspectives of the actor are revealed to the recipient. While paradigmatic thinking tends to abstract and embed knowledge into a general logical system, narrative cognition is individual and personal.

In order to understand why storytelling is so effective and natural in everyday human communication, we need to explore its general functions. The relationship between cognition, memory and narrative is addressed by narrative psychology. The act of storytelling involves a unity of knowledge construction, transmission, reception and storage through narrative. The process, while seemingly trivial, is composed of important cognitive moments: (1) in constructing the narrative, the narrator subjectively organizes his memories, (2) for the transfer, the narrator creates a linguistic or pictorial representation, (3) the representation must follow a narrative logic that is interpretable to the receiver, (4) collectively interpretable narrative schemas help with memory retrieval.

Understanding human cognition through the telling and reception of stories is aided by key concepts from narrative and cognitive psychology such as *representation*, *narrative*, *schema* and *script*. The definitions for these concepts are underpinned by cognitivist social psychological and psycholinguistic models. In a constructivist approach to narrative psychology, *representation* is an active process whereby an individual creates a substitution of a phenomenon outside him or herself while accounting for similarities and differences. During ‘re’ – ‘presentation’ the individual recalls the event, concept or person, and as it were present, ‘presents’ it. The function of this mental action is to create a representation of the objective cultural and social reality that is meaningful for the individual. Individual or community representations, however, not only define the cultural and social milieu,

but also determine it (Moscovici, 1988; cf. László, 1999). The number of representations is infinite since there are as many variations as there are individuals. In addition, a narrative representation can be expressed in different frameworks, including mimetic, iconic or linguistic systems.

Narrative representation in itself is a sense-making process using gestures and language which is organized by intentionality, (i.e. the system of intentions, goals and means of actions). In a narrative, the thoughts, emotions and perspectives of the actors also appear (Bruner, 1996).

Stories help to facilitate the simple flow of information in the development of interpersonal interactions, as narrative schematization makes the actor's state, goals, plans and motive system interpretable (László, 1998; Pléh, 2012). A narrative is universally accessible and comprehensible to humans even if not all elements of the action appear in it. Automatically used patterns and scripts contribute to the understanding of explicit, unexplained details. *Schemas* help to organize experience and understand human behavior. Bartlett (1932) examined the accuracy with which people recall the narratives they hear, and observed that people left out some episodes and added others while recalling the narratives; verbatim recall rarely occurred. One of the conclusions of the research was that the retold events were built on a kind of skeleton, called a *schema* (Pléh, 2019). At the same time, the findings also provided evidence that the mind is constructively involved in storing memories, and that it relies on prior knowledge of the topic to make memory storage as efficient as possible. Bartlett's constructivist approach is also reflected in dynamic memory theory, according to which events are organized in a logical order using typical story patterns or scripts.

A *script* is a set of simple, everyday actions in which the sequence of steps is constant, and a script is therefore nothing more than an architecture of events in a stereotypical situation. Most scripts refer to simple situations in which people perform an action (such as ordering in a restaurant, going shopping, visiting a hospital, etc.) and are episodic scenarios. Instrumental scripts contain procedural actions without individual interactions (e.g., driving a car). Personal scripts involve patterns of action involving the building of interpersonal relationships (e.g., courtship or flattery) or individual rituals (e.g., superstitions or prayer) (Schank & Abelson, 1977; cf. László, 1999). The knowledge elements associated with a particular situation develop as a result of repeated experiences, but general information or the experiences of others may also contribute to the information of a script. The script is an active memory organizer which arranges experiences into clusters of similar types of situations, contributing to the understanding and interpretation of actions. During learning, the sequence of events is mastered and the consequences and possible effects of actions become clearer and clearer. By applying the rules of a script, individuals can also make predictions about the possible outcomes of events. Humans automatically apply the scripts learned throughout their lives to achieve various goals. The more scripts

humans know, the fewer situations they will be surprised by. However, if we look at stories as relevant examples for special cases, we understand that they are important for memory because of the context of the events. When we hear other people's stories, we look for similarities with our own stories and recall those that have strong similarities in theme, purpose or problem-solving. The purpose of such highlighting is also to draw consequences from a story, to find the differences and compare the elements of one story with those in our own. Other people's stories are only stored in our memory if they relate to, complement or help us to reinterpret our own narrative. The more unusual, perhaps norm-breaking stories we listen to, the more easily we can interpret new, unusual situations (Schank, 1999).

Schank's theory brings us closer to understanding how narrative structure helps individuals recall content more easily. The processing of events is supported by aspects such as what happened in a physical sense, where the events took place, what social situations characterized the sequences of the events, what impacts were achieved, and what purpose the events served. Memories are stored in scenes and the purpose of these scenes is to evoke events (Schank, 1999).

Language is the typical representation system of narratives and has a fundamental function in memory. Nothing proves this better than the fact that reconstructing memories before language acquisition is almost impossible. At the end of infancy, children acquire language through scripted routines and contextualized actions. Parents and carers are involved in these situations, and when reflecting on them they recall events in the form of narratives. At this age, children enjoy listening to stories about everyday events that are part of their reality, whether it is a summary of the day's events or a pre-written narrative based on realistic events in the life of a child of the same age. As children become older, they become more confident in expressing their conflicts and feelings in stories, and they begin to identify with roles. By the age of four, children have mastered the narrative structures of their culture, which they use to tell their personal stories (Cole & Cole, 2003). Children gradually learn the framework for storytelling. The recollection of shared experiences takes place in shared stories in the form of dialogues between parents, carers and child. At first, parents are more active in narrating events, but later the parents provide less and less contribution and give space for the child to reconstruct his or her past experiences in narrative form (Király, 2002).

However, the scripts stored in memory and organized by goals are not stories. Storytelling is both creation and recall. Creating coherent narratives helps to keep them in memory, because while creating a story we also reflect on events and make connections. In the process of story creation, experiences are organized into units in order to be told, and affective experiences can be stored and recalled more easily (Schank, 1999).

1.2 Individual and Collective Memory Constructions

Autobiographical memory is conceptually structured: it involves temporality and a narrative structure that makes memories accessible and reconstructible. The *autobiographical self* is the conscious, historical experience of the self which can reconstruct events of one's personal past and represent them in narrative form during social interactions with friends and family members. By evoking events, humans create a personal story about who they are, give meaning to the events, and outline the social relations that are important to them. The recollection and interpretation of memories may vary depending on the situation and goals of the storyteller (Fivush, 2019). Recalling context is a key element in the reconstruction and articulation of the life narrative. Events are organized into thematic units based on ontological categories, and actors, locations, time, objects, as well as actions and related thoughts are also reflected in the narrative of memories (Király, 2007). The architecture of autobiographical reminiscence is the life-stage structure (Schacter, 1996), the thematic framework of memory reconstruction in which the scene units of autobiographical recall appear.

People recall a common event in different ways, each adding a different element to their narrative which is special to them. However, memories can also be distorted by the passage of time, elements taken from the narratives of others, and the recollector's prior knowledge, prejudices and emotional state. The core story and contextual framework of traumatic events is usually accurate, and distortions are only in the small details. Preschool-age children have problems with recalling sources, and their storytelling can be strongly influenced by suggestive questions. Children of this age can also confabulate a story, and imagined events can appear in a realistic context or are confused with real events (Schacter, 1996).

The so-called narrative turn in psychology in the 1980s brought with it a whole new approach: the linguistic structure of narratives became the object of study. According to the basic premise of the movement, language is a means of forming meaning and thus of understanding the world, and therefore the structure and language of the narrative reveal much about the narrator's individual attitudes, emotions and identity. In the texts of narrative – in most cases autobiographical – interviews the turns of events, the structure of the narrative and the use of language also provide data about the narrator's identity constructions and status. The method of narrative content analysis differentiates individual narratives into three categories: the *canonical event*, which is a predictable, common sequence of events; the *narrative perspective* (the relational architecture of the narrator and the narrative's characters); and *narrative coherence* (causality) (Szokolszky, 2020). In the case studies of life narratives, common motifs and patterns can be observed between the narratives of individuals who have experienced the same (usually traumatic) event. Researchers group the common elements of the narratives into thematic

categories, aggregates their frequency of occurrence, and analyzes the patterns that emerge.

The narrative approach includes two important elements: *temporality* and *action* (Pléh, 2003). Narration is a specific form of organization of events: some content is omitted, while other content is highlighted. The narrative is thus a unique construct, a specific self-representation which, although it is a historical and causal representation of external events, still reveals the narrator's organization of content. The narrator selects only the most relevant elements from memory for the historical-logical structure of the narrative. Following this logic, the creation of narratives is not only a construction, but also a reflection and an interpretation.

By examining the relationship between narrative and the narrative identity of the individual, we arrive at a philosophical approach. Ricœur (1999) argues that one's self-understanding is embodied in narratives – even if they are fictional. The function (and liberating power) of fictional narratives is to provide an infinite number of possibilities.

Ricœur's concept of the relationship between narrative and time leads to the idea that narrative structure provides the framework for the construction of human identity since the narrator “[...] constructs himself from the ,narrative’ of his own past, present and future.” (Orosz, 2003, p. 17) It is through oral or written self-narration that the narrator becomes aware of who (s)he is. The narrative identity is the life story of the narrator, which is continuously constructed from autobiographical memories until death. The themes, characters and challenges of the developmental process emerge from the socio-cultural matrix of the individual.

According to Ágnes Heller (2015), stories play an important role in autobiographical memory. Through narration, the consciousness of continuity is formed in the mind, and thus the ability to think in terms of temporality: the past, present and future. The sequencing of life events according to a narrative logic presupposes continuous internal interpretation and narration. This involves a process of self-interpretation, as memory fragments are arranged thematically, not by date and time. Heller highlights Proust's autobiographical novel *In Search of Lost Times* as an example of the strange interconnection of memory and narrative. In this case, a single memory fragment reveals a complex, non-linear narrative.

The autobiographical memories of the past are constructed in the present and reflect the present. As Heller points out, the self remembering in the present is not quite the same as the self from past memories. Moreover, recollection at different points in time allows for different selves and thus different interpretations. The environment, the interlocutor or the societal expectations can also influence the interpretation of the memory and thus the structure of the narrative. The narrator tells a story both through the narration of past events and through the sharing of memories. Heller argues that in autobiographical narratives the self defines itself, narrating its journey from

past to present. According to Heller, although autobiographical narratives are often written with the purpose of gaining a better understanding of oneself, an individual can never know oneself completely; autobiographical narratives can therefore only partially contribute to self-knowledge.

Heller sees autobiographical narrative as fiction. Already at the moment of the event those present form interpretations of what happened, and later, when the experience is retrieved, the interpretations stored in memory are incorporated into the narrative told in the present – although these interpretations may later be revised. Self-narration becomes inauthentic, according to Heller, when the narrator manipulates the storytelling for external reasons (e.g., political or material interests) or for self-justification (e.g., by over-emphasizing evidence of victimhood). In this case, the narrative is not a representation, but the narrator's presentation through narrative.

Narrative construction is crucial in individual knowledge production and retrieval, in social communication, and in the cultural heritage of a group. Bruner (1996) argues that human learning is embedded in a cultural context since the mind cannot exclude it from the process of meaning-making. Individual knowledge constructions are created through the narrative interpretation of the world's phenomena through human interactions with cultural symbols. This system of symbols is known, preserved, developed and passed on to future generations – thus ensuring the transmission of culture and the creation of cultural narratives. Individuals define their place in the world through their own narratives, and cultural narratives provide a framework for individual actions and identity formation.

Commonalities are often found between individual narratives, especially when the individuals are members of the same group. Individual stories are also linked in different ways to the story frameworks found in a given culture (László, 1999). Individual narratives are relevant to the identity of a group, as the memories that define the group are manifested in the form of stories. These narratives play an important role in maintaining group identity and preserving cultural memory (Assmann, 1999). Such stories can be anecdotes and reminiscences of kinship within a family, but also national sagas or individual oral histories interpreted by historians with the help of external sources. Identification with these stories strengthens group identity, reinforces important characteristics of the group and creates a *community of remembrance*.

In all human cultures, there is a dominant worldview that determines how meaning can be made, and within this system are countless shared and individual stories. Repetitions can be detected in these narratives, but they all have a fixed point which Heller (2015), following Assmann, calls *cultural memory*. The shared individual stories fit into the same common narrative, creating a dominant worldview. Cultural memory, with its many stories, further influences individuals, who have the opportunity to identify with the heroes of the dominant narratives shared among the group. The subjective

experience in the individual narrative cannot be entirely individual, because it also repeats the central narrative of the culture. The circle is thus closed; as Heller puts it:

Saint Augustine could not have experienced what his Self had experienced three hundred years earlier, or if he had been born in India. [...] The autobiographic Self cannot be ‚transposed‘ into another world, another community, another age than that in which it lived. (2015, p. 138)

The ancestral histories of cultural memory and the rituals associated with them allow the connection of the remembering individuals and those who are remembered now, and the uniting of the past and the present. Heller cites as examples the story of the Exodus from Egypt (linked to the Jewish Passover) and its revival, as well as the story of the crucifixion of Jesus (linked to the Christian Easter). Both the Torah and the Bible are manifestations of the identity of a community, of Judaism and Christianity. Heller distinguishes between religious and nation-shaping cultural narratives since, in the case of the nation-shaping narrative, credibility is enhanced if the event is closer in time to the present and can be linked to a kind of collective experience (e.g., the funeral of Imre Nagy) – in this case, the main role is played by collective memory rather than cultural memory.

1.3 Evolutionary and Cultural Psychology

In the interpretation of evolutionary and cultural psychology, the emergence of the narrative was an important stage in the process of becoming human. Storytelling through language is an important social act, the key to transmitting and maintaining culture.

The theory of the social embeddedness of memory emerged in the early 20th century. Although the idea that individual memory cannot be independent of the cultural-social environment was already expressed in Bartlett's theory of memory, Halbwachs explicitly made social communication a prerequisite for cognitive processes. The group plays an important role in the act of shared storytelling as it functions as a kind of filter, bringing out the individual's narratives which are relevant to the group through dialogue. Thus, narratives that emerge within a group thus also create the collective memory of a group (Halbwachs, 1925/1950; Pléh, 2003, 2019). However, collective memory is not the same as cultural memory. Heller (2015) differentiates the two concepts along the time dimension of stories told in local groups. According to this notion, collective memory stories are common experiences lived in the same period of time (such as a shared experience of a fire or a theater performance), while cultural memory either refers to events in the past or is a narrative that

crystallizes from elements of several texts (such as a national saga), even if they are passed down by word of mouth.

Information transfer is the key to the survival and development of our species. In his theory of *cultural transmission*, Tomasello (2001) argues that the human species' superiority over other primate species can be explained by its capacity for cultural learning, which is learning based on social cooperation. In the knowledge-transferring process, the child absorbs what the culture has to offer in a given social group and social context through linguistic interactions with members of his or her species (Tomasello, 2001). Narrative construction represents a specific form of cultural transmission, in which individual narratives reflect the emotions and experiences of the narrator. Narratives are links in a web of cultural memory, delivered to a recipient who identifies with the content of the narrative, reflects on it, creates a dialogue, establishes an analogy between his own life experiences and those of the narrator, and draws new knowledge from the lessons learned. Mythological or literary artifacts in certain cultural circles are works of cultural transmission.

Donald (1993), based on his theory of *cultural evolution*, divides human cultural evolution into distinct stages, each of which is associated with a specific system of representation and knowledge transfer. In the mimetic culture, human knowledge transfer was characterized by mimesis (i.e., imitation). Later, in the mythic culture, language emerged as a form of representation and communication, together with verbal semantic memory and the use of linguistic symbols. The ability to create narratives can also be linked to this period, which represented a leap forward in terms of information transmission since narratives are systematic and logical sets of information that contribute to the reception and interpretability of the message.

Donald (1993) views human cultural evolution in terms of *cognitive representational systems*, all of which are embedded in human mental architecture. During the period of *episodic* culture, our primate ancestors lived their lives in the present, experiencing the world as a series of episodes. The social sharing of experiences was not yet typical of humanity, as the communication tools of self-expression had not yet developed; therefore we cannot speak of a separate system of representation. Conscious representation of memories only became present in the next period with the development of *mimetic* culture, when mimesis (i.e. conscious imitation) appeared in communities of homo erectus based on social structures. The major difference with the previous period was that this was already a conscious representation of events in the context of social action. An important role in communication was played by the prosodic control of body language and voice: the conscious manipulation of tone volume and accent which was not yet speech. The real breakthrough was the gradual emergence of spoken language in the process of becoming human. Following the development of *mythic* culture, humanity acquired the ability to create and decode verbal semantic memory leading to the use of linguistic symbols and narrative. Sharing stories about reality

became the most important means of cultural transmission, enabling the historical reconstruction of the past. The use of narrative structure is the most adaptive form of all the cultural products of human knowledge transmission. The next turning point in relation to the transfer of knowledge was the development of a means of storage. In the *theoretical* culture, writing and then printing appeared, and with them – in Donald’s terminology – external symbolic storage systems, which are considered as technological knowledge-preserving hardware. The cognitive capacities of our species were augmented and transformed by these physical repositories. Humans placed (and continue to place) their knowledge outside the biological boundaries of their bodies, as knowledge in memory storages outlives the narrator. Access to external memory storages makes one’s memory virtually unlimited as well as more accurate; however, to decipher the codes one must learn to read, write and know how to search and store information in external systems.

New tools and new media are being invented to pass on memories and ideas, be they written, visual or audiovisual. In the world of external storages, information can be found in books, newspapers, photos and films, and this contributes to building a relationship with the person who once created the content. Donald notes that human culture has been networked from the very beginning, since the first human associations, and that increasingly complex cognitive, affective and memory networks emerged. Today’s digital narratives are gaining publicity across borders through being shared on the Internet, and their virtual nature makes them independent of space and time, manifesting a new form of knowledge transfer.

Since the various human representational systems can all become active in varying degrees at the same time, we can experience quite subtle and complex states of consciousness. [...] A well-made film in particular can tease the brain simultaneously on the episodic, mimetic, and linguistic levels, sometimes conducting a different theme on each level. (Donald, 1993, p. 370)

CHAPTER 2. NARRATOLOGICAL APPROACHES

Narratology, or the science of narrative (Todorov, 1969), is a multidisciplinary field developed in the 1960s that examines the structural organization of narrative texts. The structural analysis of narratives is not without precedent in the humanities: narrative syntax is concerned with the structure of texts, semantics with their meaning, and pragmatics with the circumstances of their use. The discipline has been directly inspired by the generative grammar of Noam Chomsky and by Russian formalism, including Propp’s morphology, while narrative pragmatics is inspired by speech act theory.

2.1 Ethnographical Connections

The narrative structure of oral legends, tales and sagas is dealt with by ethnography. These language monuments preserve the linguistic features present at the time of writing, and in this sense, they represent a research field for language historians. For ethnography, however, it is the socio-cultural aspects of these narratives and their functions in the community that are of interest. The narrative forms of ancient storytelling have been passed down from generation to generation and reveal the dominant worldview of a given community, as well as people's relationship to others, to nature, and to transcendence. At the macro level, such narratives are national identity stories (e.g., heroic epics), and at the micro level these narratives spread through personal networks (e.g., through gossip).

The collection of oral narratives related to folk traditions is one of the main aims of ethnographic research. These narratives are then examined in terms of their cultural-social determinants and functions. A prerequisite for storytelling within a community is the existence of a common language, common speech patterns and customs, and common rituals. The oral transmission of texts was passed down in communities of memory until they were collected and transcribed (Keszeg, 2011). Ethnographers' transcriptions were stored in thematic collections, such as the collection of sacral healing texts (Pócs, 1985-1986) or the collection of texts related to Hungarian folk traditions (Dömötör, 1983). Hungarian folkloristics also focus on the collection of folk ballads and their interpretations in local contexts. Folk ballads are local folk narratives that recount a tragic plot in verse-song form, revealing the circumstances of a murder or other violation of the law as well as the punishment of the perpetrator. The narrative structure and melody served to transmit the story in local memory.

Narratives can also be grouped according to their role in social behavior. Voigt (1972) classified folk narratives according to their function and purpose. Within certain rites, different genres have become established and acquire their legitimacy in particular social situations. Keszeg (2011) names weddings as an example, in which a number of genres fulfill different functions, such as the groom's farewell, the bridal send-off, and the ceremonial songs before meals.

Ethnography also explores elementary narrative structures. The trend towards the typological study of fairy tales and epic works originated in Scandinavia at the end of the 19th century. Carl Wilhelm von Sydow distinguished the stages of story development on the basis of story types. In von Sydow's typology, the first level is the *statement*, which can be a propositional or prohibitory predicate about people's beliefs and worldviews. The *memorat* is a formulation of individual experience in narrative. The *fabulat* is the most complex level of communication, in which the narrator represents episodes in the form of a poetic narrative. Such texts are the various sagas and tales present in the public consciousness. Von Sydow typologized the

different types of sagas and distinguished the so-called pseudo-sagas, which resemble sagas only in their formal features (von Sydow, 1948; Dömötör, 1969). There are also textual variants of the different story types. Ethnographic storytellers are often confronted with the fact that the storyteller mixes the turns and events of his or her own life story into the act of storytelling, and uses the skeletons of different story types as a foundation on which to build individual episodes, interspersed with typical rhetorical turns (Bálint, 2014).

Another direction in the study of narrative is represented by the Russian formalist ethnographer Propp, who explored the components of the magic tale in addition to their relationships to each other and to the narrative as a whole using a morphological approach borrowed from botany. Propp's (1928/1999) method of analysis was to collect the constant, common (invariant) elements of narratives and explore their relationships to each other. Propp found that the structure of magic tales consists of units around which certain motifs can be grouped. The motifs can be very diverse, but the structure is the same in all magic tales. In his study, Propp structured the tales according to actions and assigned a function to each action. He found that the recurring elements of fairy tales include roles that are linked to the roles of the actor: *the hero*, *the false hero*, *the villain*, *the dispatcher*, *the helper*, *the donor*, *the princess*, and often *the father*. One role may correspond to one character, but there may also be cases where one character is associated with more than one role, or where one role is fulfilled by more than one character. Propp also considers it important to look at the attributes of the characters, (i.e., their external characteristics such as age and gender).

Instead of the motifs of the tale, Propp examined the function of the characters in the narrative. Functions are seen as the main building blocks of the tale on which the whole plot is based. Propp described a total of 31 functions, with so-called auxiliary elements creating transitions between them, such as information, repetition (usually triplication) of actions or attributes, or motivations (i.e., reasons and goals that motivate actions). In Propp's division of functions, most of them form pairs of opposites (e.g., struggle-victory and elimination of scarcity-absence).

Like Propp, Lévi-Strauss (1955) undertook a structural analysis of texts as well. He considered the *mytheme* as the fundamental generic unit of the narrative structure of myths. Lévi-Strauss adopted an ethnographic perspective, and he not only described the deep structure of the narrative but also explored the role of narrative in mythic thought. Barthes and Duisit (1975) differentiated the functions of the story from a different point of view. The *key functions* are cardinal to the understanding of the story; they provide its skeleton, and without them the text is unintelligible. The cardinal functions are important for the details of the story. Those story elements that refer to the motivational background of the story are called *indexical* marks by Barthes, while those that refer to the circumstances of the story are called

informative marks. Füzi and Török (2006) formulate the relationship between Barthesian terms in the following way:

[...] Barthes distinguishes between two large units of marks that make up a story: distributional units (these are the functions – the keys and catalysts) and integrative units (these are the indexical marks and the informants). There is a distributive relationship between units at the same level: they are the branching points of the story; if the marks mediate between the different levels, we speak of an integrative relationship. In other words, the distributive units are responsible for the variety, the turns in the story, and the integrative units are responsible for the unity of the story and for the necessity of its turns, for its motivation.

The interdisciplinary richness of the concepts of narratology was also contributed to by the cognitive psychologist Bruner (1996), who argued that fictional and documentative narratives are all based on narrative structure. What all narratives have in common is that they have an *actor* (agent) who *acts* in a particular *setting* to achieve his or her *goal* while using specific *means* – the engine of all stories being *complication*. All narratives begin in the same way: by presenting the original arrangement of the usual, legitimate framework. The whole story then revolves around restoring the old order or, by overturning the old order, establishing a new – even revolutionary – order with new laws and circumstances. Bruner also describes how narratives end with a *coda*, whose function is to connect to the present context in which the recipient is embedded by elevating the conclusion to a general level. This structuring of the narrative is similar to the Aristotelian triad of the beginning, middle and end.

In terms of narrative structure, the Aristotelian tripartite division became known in Hungary, while in the US the pyramid of the 19th-century German writer and thinker Gustav Freytag (1894/1905) became popular. Freytag's structure of the drama, summarized in five parts, consists of the following stages: (1) exposition and crisis, (2) rising movement (complication), (3) climax, (4) return or fall, and (5) catastrophe or resolution.

2.2 Narrator – Narration – Time/Space – Fabula/Syuzhet

A very different approach to narrative emerged among the Russian formalists in the first decades of the 20th century. This way of thinking strongly influenced the structuralist trend in literary studies, which aimed to establish objective forms, structures and concepts for analysis. The formalists introduced the concept of the *fabula* and *syuzhet*. According to Tomasevsky, the *fabula* is the logical, causal and chronological connection of the elements, while the specific arrangement of the elements in a narrative is the *syuzhet* (Thomka, 1981). On the basis of this *syuzhet*, the recipient can deduce the

supposed story (i.e., the logical-chronological-causal order of events). This conceptualization is similar to that of the structuralist linguistics dichotomy of language (*langue*) and speech (*parole*) (Saussure, 1916/1967). Language is a set of grammatical procedures and structures, while speech is a particular, individual representation of linguistic structures.

Narratology takes a very different approach to the conceptualization of narrative, making a fundamental distinction between the author and the narrator, and between the *hero* and the *narrator*. There is, however, an important conceptual nuance between the definitions of narrative found in the social sciences and those in narratology. Narrative can be generally defined as the act of structuring signs in a narrative way, and it can also be used to refer to a narrative structure itself (in verbal, kinetic, iconic or audiovisual form). The term narrative, however, has an additional meaning beyond the general one used in the social sciences, as it can also refer to a typical paradigm of thought.

The *narration* is the way the narrative is created and presented. Narration involves both the act of creation and the act of reception, so in the process, there is a narrative agent (*narrator*) and a receiver. The narrator is present in the *syuzhet* while the author produces the text. The two are not the same, as the narrator is invented by the author to tell the story – although the two roles may merge in the case of certain types of autobiographical or journalistic texts.

In narratology, Genette's (1983) conceptual framework highlights the difference between author and narrator. Genette asks two simple questions: who perceives events and who narrates them. In Genette's conception, the narrator can always be seen as a subject, even if he or she does not appear directly in the narrative. When the narrator's voice is part of the world that is narrated, the narrative position is *homodiegetic*. When the narrator is not a part of the narrative, but is an outsider to the story being told, his or her position is *heterodiegetic*. However, the narrator's position can vary within a narrative. The narrator, according to Genette, can be at different distances from the narrative; in this sense, his or her voice can be heard in narrated, transposed or reported speech.

Genette introduces a new concept related to the narrator's knowledge horizon, namely focalization, which is an extended version of the earlier Todorovian concepts of aspect and perspective. The narrator can also narrate from an external point of view, describing the action from an external perspective, as well as the characters and their environment. But the narrator can also narrate through the characters' point of view – for example, in narratives of the self – and the point of view of the narrator can change during the narration.¹

1 Genette defines *zero focalization* as a kind of authorial position in which the narrator knows more about events than the character. Internal focalization is when the narrator has the same knowledge as the character. External focalisation is when the narrator's voice reflects a lesser degree of knowledge relative to the characters, as the narrator does not know the inner world of a given character.

Genette introduces categories of time for the analysis of narrative structure, which are chronology, duration and frequency. The chronology shows the order in which the events of a story appear in the narrative.² According to Chatman (1999), a feature of the narrative is its dual temporal structure. Regardless of the medium through which a story is actualized, the narrative involves both the temporality of events in the story and the time in which the events are presented in the narrative. These two temporalities are independent of each other, and typical examples are *flashback* and *flashforward*.

The duration (i.e., how long an event unit is presented) is the factor that determines the dynamics of the narrative, (i.e., how fast or slow the narrative flow feels).³ Genette also distinguishes between different levels of narration. The outermost level of narration is the frame narrative (*extradiegetic narration*). There may also be additional instances of narration within a larger narrative (*intradiegetic narration*). A *metadiegetic* narrative is when a character's narrative appears within the frame narrative. As in syntax, narrative situations can be related to each other in different ways. Two situations may relate to each other in an *additive* way, or the relationship between two narrative situations is said to be *consecutive* if the insertion of one is necessary to explain the other. The insertion of a narrative situation that cannot be explained at the level of the story is *correlative*, which is given meaning through the reader's interpretation. Bruner (1996) draws on Ricoeur's (1984) theory that narrative time is humanly relevant time. This means that only those events are relevant in the narrative that are important from the point of view of the characters and the narrator. Bruner, like Propp, therefore believes that the narrative is segmented by crucial events of varying importance. According to Propp, the narrative text, regardless of genre, can be viewed as the acquisition of a desired but limitedly accessible object or device. The characters' motivation is the link between the elementary units of action found in the narrative.

2.3 Literature Theory

Bruner (1996) believed that people construct stories about reality as well as fiction. In the analysis of narrative, the distinction between what happened or did not happen is not decisive. Szegedy-Maszák (1998) distinguished between four levels of a narrative text. The level of the text that is directly perceptible

2 In analepsis, the narrator recounts an event that happened before, and in prolepsis the narrator presents a future event. In both cases, it may also be interesting to examine the distance of the flashback from the time of the narration (i.e., whether or not it takes place outside the time of the narration).

3 This category includes compression or summary, the scene itself (the plot outline), the pause, and the ellipsis, when a logically important event is left out of the narrative. In terms of frequency, events that occur once can be told once (singular narrative mode) or several times (repetitive narrative mode), and events that reoccur can be told once (iterative narrative mode).

to the recipient is referred to as the *stylization* of the text, consisting of word pictures and figures of speech which are not independent of the cultural, linguistic and genre conventions of the time the work was created. The second level is the *spatial and temporal* nature of the text, where space is subordinated to temporality. Moving towards deeper structures, on the third level are the *narrator*, the *character* and the *recipient* of the story, and it is at this level that the speech situation and point of view appear. According to Szegedy-Maszák (1998), the constant principle of the narrative is that it consists of an opening balance, a process and a closing balance. This division corresponds to Freytag's and Todorov's description. According to Todorov (1971), the stages of transformation in a narrative are: (1) equilibrium; (2) the disruption of equilibrium due to an event; (3) recognition of the disruption of equilibrium; (4) the attempt to restore equilibrium; (5) new equilibrium. The main task of the narrative is therefore to showcase the events related to the disruption and restoration of the equilibrium, while linking these events with chronological and motivational elements. The fourth level is the narrative's level of values, its world view which is the source of the literary work's impact.

A literary text is a complex system and as such is both synchronic (being produced at the same time) and diachronic (reflecting on earlier works) in relation to other texts. The relationship between texts is *intertextual* – meaning that texts incorporate the meanings of other texts into their own space. Texts may contain references to other specific texts, genres, or cultural works. In intertextuality, the emphasis is on the relationship between texts and the author is relegated to the background. A prerequisite for reception is that the reader recognizes the intertextual references and is familiar with the work that is being referred to. Since both the referencing work and the referenced works have different meanings for each reader, the work becomes open to interpretation (Orosz, 2003).

Barthes (1970) developed an interesting approach to narrative, positing that communication is not from the author to the reader, but that writing is the voice of the reader. Thus, it is through the reader's psychological participation in the narrative that the text gains true meaning. Being in the narrative is therefore an experience for both the writer and the reader. This is a dynamic way of understanding the text since it presupposes a multiplicity of perception and interpretability. In his early work, Barthes saw writing as an act of historical solidarity, as the possible writing modes of the author depend on the combined effects of tradition and history. In *The Zero Degree of Writing* (1953), he gives the example of 19th-century novels written in the simple narrative past tense, with actions depicted in the singular third person in order to maintain distance from the characters. Ideally, the text would be stylistically deprived, of which Barthes cites Camus's *The Indifference* as an example. In *The Death of the Author*, Barthes (1968) finally goes so far as to separate the narrator and the writer completely. In ancient societies, the use of the narrative code was the task of the shaman, who performed on behalf of and for the

group. Barthes's critique of his contemporary literary theory was that it was extremely author-centered, linking the work to the biography of the author. In Barthes' interpretation, writing is not a presentation, characterization, or notation, but rather a performative act, a kind of 'subjectless' expression.

2.4 Genre Theory

The most common way to classify narratives is by genre, which offers a kind of narrative template for analysis. Bruner (1996) argued that the actions of the characters in a story and the events that occur around them make sense in terms of the genre of the narrative structure that surrounds them.

Plato, in the second book of the *Republic*, distinguishes between two kinds of narrative, the *true* and the *fictitious*, and then states that both are educational, and that *education by sagas* begins in early childhood. In the third book, he writes that narration is when the poet presents the speeches and the events between the speeches. When the poet reproduces someone else's words, it is imitation (*mimesis*), and when the poet describes the action without imitation, it is a narration (*diegesis*). In addition to emphasizing the narrator he also draws attention to the temporality of narration. Although Plato's work also identifies specific genres (epic poem, tragedy and comedy), Aristotle is the thinker who put greater emphasis on developing the notion of genre.

In *Poetics*, Aristotle describes how the poetic craft reaches its peak in tragedy and comedy. Aristotle expands the definition of *mimesis* to include all poetic activity. In the first part of this fragmentary work, he gives a precise description of the distinguishing features of tragedy and comedy, and in the second part specifies their purpose. Tragedy, according to Aristotle, is the representation of good characters, while comedy presents bad characters in terms of ridicule. He also describes the two genres from a formal point of view, referring to the meter of the poem and the temporality of the narrative. Aristotle makes a detailed comparison between epics and tragedies in terms of length, meter and thematic features.

Already in this early work, a systematic approach to thinking about narrative can be found. Aristotle describes narrative as the putting together of events (*pragma*(ta)). He defines tragedy as consisting of six obligatory elements, which he further groups according to their role in imitation. The means of imitation are the plot and the characters, while the mode of imitation is language; the objects of imitation include argument, spectacle and song. Among the 'elements' of narrative, Aristotle considered the most important to be the plot (*mythos*), which he considered to be the imitation of actions (and not of people). Aristotle believed that the appeal of the tragedy was its unexpected turns (*peripeteia*) and realizations (*anagnorisis*). Aristotle proposed five criteria for the plot: (1) it must be a 'closed whole' – it must

have a beginning, middle and end; (2) it must have a certain length, which is not too short and not too long; (3) the unity of the action should be primary; (4) the unity of probable and necessary actions should be in focus; (5) the plot should contain unexpected storylines for the right effect. In addition to outlining criteria for a narrative, Aristotle also defined its parts, which include (1) 'the unexpected turn', (2) 'the realization' and (3) 'the suffering'. He also writes about the requirements of characterization, as well as the role of spectacle and language.

As seen above, ancient thinkers already started to formally group narratives and distinguished between works written in verse or prose; they also differentiated between drama and epic based on the presence of the narrator at the textual level. In epic, the narrator speaks directly, while in drama the plot unfolds through the dialogue of the characters. Further systematic thinking about narratives appeared in the Romantic theory of poetry, especially in the work of the Schlegel brothers and of Hegel, who defined the lyric as the third main genre.

After that period, newer and newer narratives found a place in the subordinate system of genres.

The function, form, and hierarchy of genres, as well as the classification of genre groups, can vary from literary period to literary period, and some genres are found only in the literature of certain nations. Moreover, genres are in a state of constant flux. (Keszeg, 2011, p. 17)

The acts, themes, and genres of storytelling also change from era to era, culture to culture and social group to social group. Some themes and genres may lose their importance and be excluded from the public sphere, while others may become particularly popular; a transformation of narratives can also be observed. Narratives conveying Christian ideology (e. g. stories of conversion, damnation and mystery) were followed by chivalric tales, then from the Enlightenment onwards by educational narratives; after the Industrial Revolution, narratives dealt with the relationship between human beings and technology. In the 16th century, a process of division began, and authorial literature consumed by the elite and popular stories passed on by word of mouth split into two registers. From the Romantic period onwards, national literature became more prevalent, followed by personal narratives from the fin de siècle (Keszeg, 2011).

Narrative schemas linked to genres can help to interpret individual narratives, but genre categories cannot be considered permanent. The function, form, and hierarchy of genres, as well as the classification of genre groups, can vary from literary period to literary period, and some genres are found only in the literature of certain nations. Moreover, genres are in a state of continuous transformation (Imre, 1996). Todorov (1988) argued that genres are not without precedent but evolve dynamically from each

other, and that the characteristics of each genre may survive in other genres endowed with new functions.

A new approach to the traditional system-oriented genre theory was developed by the famous formalist literary theorist Frye, who traced the verbal architecture that defines all human culture back to a structure that emerges from the unconscious natural world. Frye (1957) situates genres within a system of the cyclicity of nature, and concludes that there are only four kinds of genres, which he calls *mythois*. In addition to the two basic Aristotelian genres, he also names romance and irony. In Frye's classification, comedy is a narrative genre that corresponds to the archetype of spring and dawn: the heroes confront the obstacles of the outside world and ultimately triumph. Romance represents the fulfillment and power of the summer and the sun. The archetypes of autumn, sunset, and death are embodied in tragedy, and winter and darkness are expressed in irony, a parody of romance.

In the postmodern era, the genre classification of works became irrelevant (Imre, 1996). According to reception aesthetics, the genre is not an inherent, external set of rules, but is co-written with the text. The expectations of the recipients of a given work include genre conventions, but the quality of a literary work cannot depend on its place in the genre system but only on its impact, ultimately on its reception. The aesthetic value of a work is determined by the extent to which it is able to change the horizon of expectations of the recipient (Jauß, 1999).

2.5 Literary Canon

The act of storytelling cannot be considered without taking into account the socio-cultural dimension. The question of what constituted a valid (i.e., intelligible) popular narrative form in each period and what has survived is a matter of social judgment and cultural selection.

In the Anglo-Saxon and Scandinavian regions, literary canon theory was formulated at the end of the 20th century to examine the expectations of a given time in relation to works of art – including literary, cinematic, and performative narratives. The primary focus of literary canon theory is to examine which works, what paradigms and what modes of interpretation become part of a nation's cultural identity, its national canon, and how and along what value system the experts validate and ultimately canonize a work. The canon can therefore also be an instrument of ideological power. Therefore canon formation is a crucial research area in reception studies, discourse theory, and constructivism, which also take social relations into account (Kulcsár-Szabó, 1996).

2.6 Film Theory

The common distinction between motion picture narratives is based on the fictional or documentary nature of the content. However, contrary to common belief, fictional stories and documentaries can be further divided into works possessing a story-telling narrative structure and so-called non-narrative films.

As narrative representations are medium-independent, the methods and approaches of narratology (such as reception aesthetics, genre theory or literary canon) can be extended to both motion picture and literary narratives. Similarly to literary narratives, a film spectator also engages with the narrative through the plot (*syuzhet*) and reconstructs the story (*fabula*).

However, while literature is able to establish a chronological and causal order by linguistic means, film uses its own poetic features to establish the relations of space and time (Kovács, 2002). Film is a performing artwork and as such its dramaturgical structure determines its impact-apparatus. Accordingly, the conventions of film narration are different from those of literature since not only verbal elements (i.e., monologues and dialogues) but also the visual architecture (e.g., planes, camera movements, montage, cuts, *mis-en-scène* elements, and image composition) and sound play a role in storytelling. The use of these features has a function in cinematic storytelling, but genres can also contribute to the reception of a work.

Hierarchy is also present in the dramaturgical structure of the film. Events in a film follow a specific space-time unity which gives rise to the film's plot. In films, there are elements which occur within (*diegetic*) and outside (*non-diegetic*) of the plot. For example, in a backstage musical the logic of the plot is that the main characters perform a musical stage number which represents a *diegetic* element. However, the general incidental music is used to express the mood of the plot. From a visual point of view, slowdowns, accelerations or intercut flashback elements are also elements taking place outside the plot (Kovács, 2002).

From an analytical point of view, the composition of the image is the smallest structural unit, and the largest is the overall narrative of the film. The compositions of images build the settings, montages of settings build scenes, scenes build situations, situations build acts, and acts build the narrative. In a plot, the scene is the smallest unit of action, the unity of which is provided by the triad of characters, setting, and plot. Scenes can be analyzed in terms of their role in the film narrative or in smaller dramaturgical units or themes within a scene. Scenes perform a turning or episodic function in the film narrative, and distinguishing between them helps to reconstruct the skeleton of the story. The larger unit of content in the film is the situation, which is made up of scenes and delimited by turns. A coherent set of situations is in turn called a sequence (Kovács, 2009). Metz (1968) considered sequences

as an analyzable, stable structure of film narrative and identified eight types of sequences.

The story arc is present in scenes, situations, and the narrative as a whole. Branigan's (1984) meta-theory of film narrative is not so much based on the conceptual framework of narratology, but on the interweaving of representations. He thus eliminates the narrator and makes use of the notion of frames instead, asserting that film narrative is multi-layered, with multiple narratives in hierarchical relation to each other.

Bordwell (1988), on the other hand, argues that a narratological approach can be integrated into film theory, but not on the basis of Propp's morphological framework. His critique examines the procedures of film analysis in which analysts draw analogies between the Proppian functions found in folk tales and the set of functions and structural organization found in certain television or Hollywood film narratives. He argues that there are major differences between the oral history of the prefeudal era and the history narrated in the age of capitalism. Bordwell argued that film narrative has structural elements which are specific only to motion pictures, and therefore the conceptual framework of linguistic communication that is suitable for the analysis of verbal narration cannot be applied to the analysis of communication in film (Kovács, 1998).

For film narratology, the breakthrough came with the analysis of film as texture, which decoupled narrative from the medium of narration. Kovács (1998) describes the three focal points of film narrative research as

(1) the point of view of the narrative; (2) the subject of the narrative (i.e., the narrator); and (3) the nature of the world revealed in the narrative. Or, to put it another way: where they are talking from, who is talking, and what they are talking about. Other aspects of the general problematics of narrative – the chronology, the logic of narrative exposition, the structural units of narrative – do not seem to represent the real cornerstones of the specificity of film narrative, at least this is what the film narratological literature suggests.

It is more difficult to find the narrator in film than in literature. Kovács points out that in film narratology, it is more relevant to consider perspective than the narrator since film always sees events from some (or someone's) point of view, showing as opposed to narrating with language.

In verbal narration, it is the narrator's voice that sustains the narrative, but in visual narration, these tools of expression are based on visual features. Casetti (1994) notes the ability of film to combine Platonic mimesis and diegesis, allowing film narrative to both present and imitate. The difference between film and drama is that a film can change the point of view and perspective. It is the feature by which characters can be emphasized or even relegated to the background (Kovács, 2002). Jost (1987) described the levels of organization in motion picture narration. According to him, cinematic narration can be

linked to processes related to visual (who sees and how? – *ocularization*), auditory (who hears and how? – *auricularization*) and cognitive information (who knows what? – *focalization*).

Bordwell (1985), from a cognitive psychology approach, argued that the viewer's understanding is supported by his or her own vision, hearing, schemata, and hypothesis-making abilities on the one hand, and by the causal architecture of the film narrative on the other. Branigan (1992), like Bordwell, argued that the viewer relies on schemata to receive films, and can only reconstruct the story from the linguistic references on the screen if he or she has a prior set of schemata about the spatio-temporal dimension, genre and stylistic signifiers of the narrative on the screen. These enable the viewer to construct the world of the film narrative (*diegetic space*). The narrative structure is a set of rules that organizes all the characters and events of a story into a whole spatio-temporal and causal order. Fūzi describes the narrative schema as

[...] an organisation of knowledge that the recipient has in advance and that plays a decisive role in recognising, ordering, and remembering narrative patterns. A narrative schema consists of the following components: (1) introduction of the setting and characters (extract or prologue); (2) explanation of the facts (orientation, exposition); (3) initial event; (4) emotional expression or statement of purpose by the protagonist; (5) complications; (6) resolution; (7) reactions to the resolution (epilogue) (Fūzi, 2006, p. 10).

In his narratological approach, Branigan (2013) argued that the story is conveyed to the receiver through the signal system of the narration, who cannot reconstruct the story without prior knowledge of the conventions of the film's two-dimensional signal system.

Grodal (1997) argued that the emotional impact of narration is also strongly influenced by the genre expectations of the audience. As an example, he cites a scene in which the hero falls into a trap, which may result in crying if the viewer interprets it from a melodramatic perspective, laughter from a comedic perspective, or a scream from a horror perspective.

The viewer understands the film narrative if he or she can interpret the events of the plot as a story- regardless of the order in which these events follow each other- and understand that the plot of the film can unfold in several threads. However, when analysing the structure of the film narrative, it is also necessary to take into account the fact that the general rules of film narration are not valid across the entire audiovisual universe since the classical narrative forms have been supplemented by alternative forms since the second half of the 20th century. These forms can also be traced back to conscious directorial choices, as directors, especially in postmodernity, deliberately depart from the rules of classical film narration. It is also important to note that many new narrative media have emerged in recent years, and the

medium (cinema, television, or computer) can change the characteristics of the narration (Kovács, 2002).

CHAPTER 3. COMMUNICATION AND MEDIA THEORY

The number of media for storytelling is constantly expanding, and Donald's theory of cultural evolution suggests that they are in complementary relationship with each other. From a historical perspective, three periods can be distinguished in terms of the use and social impact of media.

The typical institutions of the age of spoken language and manuscript writing (the logosphere) are the kingdom, the church, the faith, and oral preaching; the media of print (the graphosphere) are the republic of citizens, the secular state, philosophy, and elected leaders; [...] and the audiovisual media sphere (the video sphere) is characterized by 'catholic' democracy, the seduction of the event, the triumph of political emotion over political reason. (Barbier & Berjho Lavenir, 1996 – translated by the author of this book)

Narrative activities are realized in social relations, and the conventions of story creation, communication, and transmission are determined by the social context. Access to information through technical media is not a given for all ages and for all social classes. Access to media is strongly dependent on the socio-cultural status of individuals and the availability of the medium. Until the spread of technical reproduction, the small number of handwritten texts was only accessible to privileged groups in society (e.g. scribes or clergymen); even if the illiterate masses had access to these texts, they would not have been able to decode the characters. The need to eradicate illiteracy on an ever wider scale began at the time of the Reformation and was fulfilled by the Enlightenment, the spread of scientific and systematic thinking, and the industrial revolution. From the 18th century onwards, with the institutionalization of popular education, reading and writing became available to a wider range of people. At this time, high and mass culture became separated (the most striking example being the dichotomy between high and popular literature). These developments made it necessary to regulate the publication of printed texts, and new segments emerged such as the book industry and the press, including publishing houses, which not only produced and distributed books, but also carried out a kind of professional pre-screening. The 19th century was also the beginning of the *networking of technical media-based information transmission*. The mass distribution of books and periodicals was facilitated by the postal service, bookshops and news agents. The *globalization* of information took place between 1850 and 1950 with the entry of new media from the early 20th century. In addition to

the delivery of private letters, books and newspapers, telecommunications services such as the telegraph and later telephony were added to the postal services (Barbier & Berjho Lavenir, 1996). The time required for long-distance interpersonal messaging was drastically reduced; the telegram was a written, essential narrative, while the telephone conversation was a simultaneous oral dialogue over a network.

3.1 Mass Media Communication in the 20th Century

The new storytelling inventions of the turn of the century were the motion picture and the radio. The radio continued the mass communication conventions of periodicals, presenting breaking news in a narrative framework and, like newspapers, publishing narratives (such as radio plays) in a serial format. In addition to fiction feature films and documentaries, movie theaters also showed film newsreels with subtitles and later with talking features covering political and sporting events, social rituals, accidents, crime, and natural disasters. Over the course of a few decades, radio and television sets became part of family rituals with their continuous broadcasts. In Europe, in the second half of the 20th century, public, state-owned broadcasting channels swore an oath to provide credible news and high culture (e.g., theater productions and political debates), while commercial broadcasters, financed by advertising revenue, broadcasted popular genres (e.g., shows, soap operas, and quizzes). Until the 1980s, European television had the functions of informing and entertaining the viewers. This dual funding division has become less prevalent since the turn of the millennium, with an increasing merging of television genres and the emergence of thematic channels specializing in different storytelling conventions (Barbier & Berjho Lavenir, 1996).

Narratives transmitted through technical media have an impact on socio-political processes, as the speed of access to information leads to more knowledge and thus to political and economic advantage. The narratives of the daily press can be used to manipulate *public opinion*; in particular, the motion picture and later the sound film have been powerful storytelling tools which have been used by a number of totalitarian regimes in the 20th century to achieve their propaganda goals.

The illusion of reality is reinforced if the visual, audio or audiovisual narrative is determined for documentation. The simultaneous live broadcast and the spontaneous effect of the hand-held camera reinforce the authenticity of the narrative for the viewer. Television's live narratives create a sense in the viewer of experiencing taking part in a live event. A defining common experience for viewers was the sensation of the first moon landing in 1969, or the tragedy of the Challenger spacecraft in 1986, or the live broadcast of the execution of the Romanian dictator Ceaușescu on Christmas 1989.

Television at the turn of the millennium also allowed viewers to witness images of war first-hand (such as CNN's coverage of the 1991 Gulf War in the US) (Sauerländer, 2004). Visuals can also have a strong influence on the message of narratives surrounding politicians during election periods – whether it is about scandalous, norm-breaking behavior (e.g., sexual abuse) or conforming to the norm (e.g., being portrayed as a faithful husband or a loving father). Alexander (2011) describes political election campaigns as a storytelling contest. He cites the 2008 election victory of Barack Obama as an example, which, according to Alexander, can be traced back to social media campaigning on the one hand, and to the framing narrative that presented the president as a hero who came from the depths, endured many trials and triumphed in the end.

However, the narratives of the millennium characterized by mass communication in different genres and formats have been presented through the filter and interpretation of the communicator. News narratives are based on a narrative structure, and include characters and the consolidation of a state of equilibrium. In the process of news selection, the content elements that are of interest to the viewer are crucial and constitute the news value. The news value is enhanced if

[...] (1) it affects many people; (2) it is timely; (3) it involves a well-known person or organisation; (4) it is about a recent event; (5) there is some disagreement or conflict between the actors; (6) there is something special about it; (7) it is related to a general topic that is well known and discussed by many people (Aczél, 2007, p. 37).

The viewer feels that he or she is part of the reality and living the experience. Carey (1989/1992) argues that by receiving the news, the viewer has a ritual experience and a hunger for experiencing novel information.

Besides news, the other dominant genre on television is advertising, whether for political or commercial promotion. The genres of news and advertising are also mixed in a short news block in the Hungarian public service media, in which six news items are broadcast in one minute. Although flash news is similar in form to advertising, its content contains a political narrative which is elaborated (i.e., reinforcing the original intention) in the long news blocks broadcast during prime time (Szabolcsi, 2021). News narratives tell the story of events outside their full socio-cultural context. The newscasts support the narrative of each news story with a series of powerful visuals to which the creators assign different purposes depending on the effect they wish to evoke (e.g., anxiety, admiration, contempt, or identification).

Mass communication cannot objectively inform the viewer about all the events taking place in a given time period, so it is clear that it is not only the verbal and visual forms of narratives that are of interest, but also the choice of the events which are included in the public discourse through

mass communication. Mass communication has an *agenda-setting* effect, which means that mass media sets the agenda for what the public should care and think about (McCombs & Shaw, 1972). *Framing theory* directly argues that mass media presents messages in a specific framework (i.e., a narrative structure) according to political and economic interests. Some events are included and others are suppressed or overemphasized, thus allowing the dominant stratum of society to dominate the masses' opinions. Those belonging to the more educated elite are better able to interpret the underlying message of mass media narratives, and are more likely to be informed by multiple sources and possess a critical perspective (Bajomi-Lázár, 2006). The reception theory of the 1990s has also influenced media research, which has raised the issue that the reception of news narratives is receiver-dependent, as each viewer brings different contexts into play when consuming mass media.

Mass media also responds to the need for explicit storytelling. The most popular radio shows have been theater broadcasts and serial radio programs (e.g. *The Szabo Family*, 1969–2007). In the heyday of Hungarian television, theater broadcasts and cabaret shows attracted the largest audiences, and the first series were already born in the early days of television broadcasting (*Captain of Tenkes*, 1963–1964). The film language, narrative techniques and genres typical of film can also be observed in the series. In *serials*, the episodes' plots build on each other. The plot, with all its plot threads, which can take place over several seasons, continues the tradition of radio plays and serialized novels published in 19th-century newspapers. The events in the serialized episodes are interesting due to their impact on the relationships between the characters. Each episode follows the same basic structure: 3-4 plot threads are narrated and the episodes are linked by a cliffhanger (i.e., an open question). The viewer is drawn to the program by the constantly evolving plot. In contrast, the episodes of the *series* are self-contained, with each episode bringing the characters back to a state of equilibrium. The episodes form narrative units – only the main characters, genre and thematic elements remain the same. Such series have only one or two plot threads per episode. In the case of serial narratives, we can speak of fragmentation by genre and by target group, as in the case of Hollywood films. What is different from the narrative structure of films, however, is that the expository section is short or absent from the beginning of the episodes, and there are several repetitive (reminiscent) elements at the level of the characters and the plot (Mittel, 2006).

At the turn of the millennium, the audiovisual content market saw the emergence of cinema film and the production and distribution of high-concept series with more complex narratives, rather than the cliché-laden series with tabloid content which had been the norm for decades. This was a response to a process that had already begun in the 1980s, when viewers were increasingly able to control the time and content of the reception of television narratives.

With the advent and spread of VHS and then DVD technology and thematic cable television, time-independent television viewing became possible. Fans could watch cult films and series at any time and watch multiple episodes at a time. The ratings of channels and their shows have declined, and at the same time, viewers have sought series with more complex narratives (Mittel, 2006). Viewers no longer appear to enjoy being distracted by commercials in their reception of narratives. Uninterrupted quality storytelling existed only through public service broadcasting in Europe and subscription channels in the US. Since the turn of the millennium, US content providers (first HBO and later Netflix) have become globally available, allowing unlimited and uninterrupted access to film narration. These providers owe their success and hence their economic profit to their viewers' insatiable hunger for stories. High-concept series are characterized by a basic plot that becomes more complicated from episode to episode, but each episode also has its own storyworld. Series build their episodes according to their own narrative logic, but Mittel (2006) notes that they can deviate from this logic in the plot or in the time management of individual episodes by means of so-called narrative spectacles in order to maintain the attention and long-term engagement of the viewer who follows the logic of the series structure.

3.2 The Medium is the Message

Among media theories, media narratology should be highlighted as a sub-discipline which examines the structure of media narratives and analyzes them with the approaches and assumptions of media theories. McLuhan's (1962) maxim "The medium is the message" conveys the notion that the technology and communication conventions of the medium determine the content and message of the narrative, and also that the content and the medium itself are always the shapers of socio-cultural dialogues. A narrative has a different message when viewed in the form of a comic strip, a radio play, a series, a blog post or a film. Since the medium itself and the media narrative cannot be separated, the communication clichés of the medium, its role in society and its target group need to be examined.

Technical media have a mediating function, and since the printing of books, all narratives communicated through external media are communicated through an *interface*. Since media are the means of information flow, including the transmission of narratives, the question arises as to what extent the interface influences the content. Do changing media really affect human culture and information transmission as McLuhan claimed?

From the point of view of communication theory, one of the most fundamental questions is whether narrative-based knowledge transfer was orally or literally determined in each period. Theories based on cultural and technological approaches to history show a chronological arc from the

oral to the written, ending with the audiovisual culture of electronic media. The latter, according to Ong (2010), represents a new kind of secondary verbalism compared to pre-literate, primary verbalism. By the end of the 20th century, secondary literacy had developed into a complex phenomenon, as the literacy provided by print periodicals, books, and encyclopedias and the literacy provided by telecommunications, telephone, radio, and television coexisted and intertwined, shaping public opinion, while the information they conveyed formed the subjects of oral interaction.

Komenczi (2014) and Goldhaber (2004) emphasize the interdependent nature of human abilities and forms of communication throughout history and describe a permanent enrichment of mental processes related to the technological achievements and culture of each era. Following Donald's logic, Komenczi presents a complex system of interfaces linked to different cultural epochs: in the era of the verbal, the cognitive functions for perceiving the environment were superimposed on a kind of secondary interface in the theoretical culture, the book page, followed by the tertiary interface and then the emblematic interface of the information society, the screen, which is also capable of performing operations. According to Goldhaber, this typical medium of the digital age influences human thinking, and can also lead to the emergence of new skills in human evolution. The *homo oralis'* verbal skills are complemented by *homo typographicus'* ability to create and receive printed resources, complemented today by *homo interneticus'* interactions in a virtual environment.

From the second half of the 20th century, the press and mass communication lost its monopoly on narrative production. First family photography – and with the spread of VHS technology from the 1980s, family videos – enabled the everyday user to create a narrative. This trend has been further reinforced by the everyday use of digital devices and smartphones since the turn of the millennium.

With the emergence and spread of the internet, interpersonal and mass communication has changed as well. From the 1990s to the turn of the millennium, the communication patterns of the second half of the 20th century were reproduced in the web 1.0 era. News portals followed the newspaper structure of the written press, chat rooms simulated the conversational nature of telephoning and text messaging, and the creation of e-mail accounts enabled private electronic mail, which was faster than telephony but had a narrative structure similar to conventional postal mail. However, the early 2000s saw a major change in the world of the Internet: the web 2.0 revolution. Websites were created that allowed for public online interaction between content creators and recipients. Blogs allowed any user to publish diary-like posts to which readers could respond with comments. Content-sharing portals also appeared where users could publish their own videos, presentations, and images. The third major change was the emergence of social media platforms that were both integrative and individualistic. The functions of these new

platforms integrate the functions of all the ICT tools of the 20th century and allow for face-to-face chatting, voice and video calls, and the consumption and sharing of verbal, visual, or audiovisual content as well as reactions to such content. According to Szécsi (2016), the convergence of verballity and literacy, characterized by the everyday use of traditional and new media together, creates a third kind of verballity which combines and adds new possibilities to the triple interface of the media belonging to the secondary verballity (i.e., radio, television and telephone). This system constitutes the new language of the network society.

Web 2.0 also represents an individualistic turn. While the technology still allows for the transmission of mass media content, at the same time personal narratives can be made public. Private content sharing has overshadowed the professional selection of content by editorial elites, which on the one hand promotes the exercise of individual freedom of expression, but on the other hand, it makes access to quality and credible information difficult due to the vast amount of data being created. Smartphones allow unlimited interpersonal communication as well as access to and the sharing of content. In the world of social media, there is a growing number of platforms specialized in the sharing of images and videos, where users share their daily stories in the form of an idealized image or a few seconds of video.

Meyrowitz (2003) considered that the emergence of a new kind of verballity also affects social stratification. In the modern culture of print, the book is the separating medium between the literate and those maintaining tribal orality, those of the same status in society having access to similar knowledge. In contrast, electronic media can be seen as an integrating medium, as they equalize access to knowledge. A uniform information environment, according to Meyrowitz, homogenizes society at the macro level and emphasizes the individual at the micro level.

Komenczi (2009) presents two pessimistic viewpoints on the spread of image-based communication. Postman (1992) calls image-dominated media communication an iconic or graphic revolution. He expresses his concern that images are slowly replacing language in representing the world and in human cognition. McLuhan (1962) shares similar views, describing the natives of the electronic media age as post-typographic people, whose mentality, he says, resembles that of the tribal man, whose thinking is determined by the pictorial.

Digital images, however, raise the problem that today's recipients consume rather than interpret images, using them according to their function. The interpretation of images is neglected, as the recipient does not reflect on the history, authenticity and context of the image, and ignores the fact that the image is an index of reality, not a technological imprint (Belting, 2004). The overuse of images is a process of fragmentation. The flood of images in Western civilization serves to maintain the illusion of immortality and obscures true meaning. Users believe they can take possession of accelerating time and

constantly create images of themselves (Kämper, 1994). While access to images was somewhat limited until the mid-20th century, man looked upon images with a need for meaning. Following the advent of the moving image and the photograph, the communication and manipulation of visual content became natural for humanity. This tendency has been particularly pronounced in the era of digitalization. Sauerländer (2004) argues that Andy Warhol's pop-art was the boundary where the line between the visual narratives of art and media became blurred. Since media images have an influencing function, they are capable of deceiving, and therefore the flood of images is no longer an aesthetic but also a socio-economic issue.

This plurality is seen in the digital multimedia narratives of the 21st century, as individual stories are brought into a global electronic media environment. The narrator of our time can be both *homo oralis*, creating a narrative through social interactions and discourse, *homo typographicus*, through applying an analytical and synthesizing approach to the search for sources, and *homo interneticus*, being able to create multimedia products that function as means of self-expression and communication in virtual space. The medium can be the message itself, as we receive narratives through different interfaces in different ways, such as the news through a television set, a novel in book form, or a holiday video shared on social media. By the beginning of the 21st century, new forms of communication emerged whereby people communicate their own experiences and their own research findings through images and narrative structure in the digital media environment.

Part II.

Storytelling in the Information Age

The computer is a symbol of the information age and the information society, capable of storing massive amounts of data on an external storage device and performing operations remarkably faster than humans with large sets of data.

According to Manovich (2001), the Internet particularly favors the emergence of database-type cultural forms (such as encyclopedic data sets) whose elements, mostly in listed form, are not causally and temporally related; this contrasts with the linear narrative character that dominates human cultural expression. At the turn of the millennium, Manovich still saw the cataloging, and indexing function of the database as dominant in the new media world, and narrative construction as possible only through the construction of individual pathways. In the information jungle of the Internet, the relationship between data is manifested through hyperlinks, which, while contextualising information and creating an infinite information network, is not a transfer of knowledge through the usual narrative structure. Manovich argued that the most challenging task for new media designers is how to combine the database and the narrative.

Computational narratology explores how to algorithmically describe a narrative and its interpretation. Research in the field is mainly artificial intelligence research based on linguistic principles (Mani, 2013). An obvious solution to generate narratives could be to use computation and artificial intelligence. The GPT-3 algorithm has generated coherent blog posts (Raevskij, 2020), but artificial intelligence can also create recipes or even write Eurovision songs by modelling, and analysing existing structures.

However, this is not where the relationship between narrative structures and computing has been fully developed. Although Web 1.0 also enabled the emergence of narrative forms in news portals and private correspondence, the real narrative breakthrough came with the emergence of Web 2.0. It was then that the Internet became more than just a one-way medium for information in the traditional mass communication model, with the possibility of interpersonal interactions over the network opening up as well.

The IT tools needed to communicate over Web 2.0 platforms have become more widely available in society, and with the rise of smartphones, networked communication became a natural practice in the first decade of the 2000s.

With the Web 2.0 turn, platforms such as blogs, social media, and content-sharing portals became available with simple IT tools that enabled anyone to express themselves. On the Internet, ordinary people did not use online platforms to share databases, but began to communicate with each other through visual and verbal narratives that took advantage of the hyperlinked, indexed nature of new media.

Communication over networks has created a new language for storytelling, described by Szécsi (2016) as a metaphorical language based on the combined use of pictorial and conceptual categories. These narratives are the cultural products of the human mind, which can be stored and disseminated on the Internet using external memory technologies. In Donald's terminology, the construction and interpretation of the narratives of networked communication activate all layers of human cognitive architecture. Communication over networks contains information compressed into a narrative, which is complemented by visual representation.

In examining media use and everyday storytelling in the 21st century, we cannot ignore the phenomenon of *media convergence*. The term refers to the co-existence of different technologies and tools for interpersonal communication and content delivery. On the other hand, the term *media convergence* also refers to the new situation that has emerged as a result of digitalization and the spread of the Internet, through which all the media in human history as well as new media coexist and are interconnected. In addition to digitized databases and books, narratives edited by journalists are also available in print and online media, radio and television alongside Web 2.0 content produced by ordinary people. Convergent broadcasting, according to Csígyó (2009), means the synergistic linking of television content delivery with web communities through which the edited content of traditional television is combined with the content quality of the online environment and the active behavior of users. Television has also seen the emergence of *time shifting* with the advent of recordable television content as well as *multitasking*, or parallel and simultaneous media consumption (of TV and Internet). At the same time, the fragmentation of content, or *modularity* (e.g., series) and the *professionalization of amateur content production* (e.g., bloggers in TV cooking shows or vlogs on online news portals) are new phenomena (Csígyó, 2009).

The first two decades of the new millennium have been a period of media convergence. By the 2010s, the proliferation of mobile devices and Web 2.0 culture meant that media convergence no longer meant just the coexistence of different media, but also the interactivity of users and the interconnection of media.⁴

⁴ A live stream of a demonstration can be followed on social media, and parents can even watch their child's graduation streamed online via YouTube, so that anyone who could not attend because of the COVID-19 pandemic could also take part. As predicted by Csígyó (2009), Web 2.0 applications have not driven television out of the market, although video streaming services with quality content are

Changes in the forms of communication in journalism go hand in hand with the evolution of technological inventions. From the 1990s onwards, the print format of daily newspapers was increasingly replaced by the free news portal, a constantly updated website designed for news. In the wake of the Web 2.0 boom, mass media institutions, news agencies, and newsrooms have also moved to social media platforms, where they offer video posts of a few minutes' duration which are based on a narrative pattern to satisfy the hunger for information of the always on-the-run reader.

Smartphones are also involved in the consumption and engagement with online media; for instance, users can send a vote to their favorite TV show or share a photo in a weather forecast app. The traditional media of the 20th century thus incorporate the use of mobile devices belonging to their recipients, a phenomenon called the *second screen*. Today, mobile devices have become such a natural part of institutional and interpersonal communication that, in addition to verbal dialogues, the graphic representation of chatting and messaging is now a natural part of the dialogue represented in feature films (Hermida, 2020).

In recent years the media industry has made efforts to meet the needs of audiences who use several devices at the same time through *cross-media* content delivery. It is now natural for a print periodical to offer its readers an online news portal and social media account, complemented by podcasts as well as blog or vlog content. This means that content is made available through multiple channels and adopts the medium's forms of expression when it is published; at the same time, this phenomenon leads to a decentralization of information.

The cognitive functions developed by humans over the course of their evolution have been influenced by the information environment present in periods. Pléh (2011) notes that dramatic differences have emerged in the organization of knowledge in traditional and network cultures. In the web world, access to information has become accelerated and formalized, and knowledge ownership has been replaced by social, networked knowledge sharing. According to Pléh, despite the free and permanent availability of virtual information at the end-user level, young people's information literacy has not increased in parallel, as they are not aware of their own information needs and spend little time evaluating information. When receiving hypertextual content, information is not organized according to relevance, but is retrieved from memory according to its visual form, as information is stored using visual working memory when engaging with hypertext.

strong competitors. However, the leading genres of television still exist (such as news programs and infotainment programs).

As internet use increases, the time spent reading printed publications is decreasing, and people read more words through various types of technical interfaces (mainly smartphones) than in print. According to Carr (2014), the spread of computer use and the Internet has had a negative impact on many cognitive functions. In the case of printed texts, absorbed reading can take place as readers have time to reflect on the textual content and concentration is more focused. Conversely, when reading hypertext, the practice of deep reading is replaced by speed reading, while deciphering hypertext and links exposes the brain to cognitive overload and limits concentration – thus hindering comprehension, memory, and learning. The flood of competing multimedia messages overloads working memory, making it harder for the frontal lobe to focus attention; the more the Internet is used, the more accustomed the brain becomes to distraction. Carr argues that the constant multitasking that results from media concentration is a hindrance to deep and creative thinking, and that the Internet is not a supplement to biological memory, but a substitute for it. Szűts (2021) summarizes the phenomenon: “As a result of digitization and searchability, our basic literacy has been transformed into an interactive, global, decentralized, anytime, anywhere, multimedia-like, broadly distributed, but less imprinted knowledge.” (2021, p. 24)

In addition to Carr’s technological determinism, attention should also be drawn to the importance of hypertext, as Internet texts offer a variety of data combinations and knowledge construction possibilities through hyperlinks and sharing. Applications that can be downloaded onto smart devices facilitate the experiential reception of information in a variety of forms, and even allow users to attach augmented reality to real-world objects. An excellent example is the use of GPS technology. Applications exist which help users create hiking routes in the form of audio guides, videos, and trip reports, while at the same time creating new shareable routes using their GPS coordinates. In addition, a number of companies offer sightseeing tours that use the user’s location data to provide localized information about buildings in the area. People on such sightseeing tours looked at their location on the route using tablets, and the stories associated with different buildings appeared to them during their trip as they were linked to GPS coordinates. Using a map of Budapest, the *Starry Houses* initiative highlights the buildings which were marked with the Star of David in 1944. The stories of these houses and the Jews who lived in them are displayed on an interactive map.⁵

The human being living in a world of media convergence in the 21st century is not only a knowledge-constructing recipient following applications and hyperlinks, but is also an active, creative and communicative social being. Internet platforms allow recipients to reflect on the content, engage in public or private dialogues and publish narrative content in any format.

⁵ <http://www.csillagoshazak.hu>

Web 2.0 has not only changed the way how content is published, but has also given users the opportunity to produce content as well. The publishing of fiction or non-fiction stories on blogs makes the plot able to be followed in real-time and involves the viewer, who can directly express his or her opinion by commenting. Users can even influence the work of the scriptwriters (i.e., the outcomes of the plot). In the spirit of creative community writing, blog fiction such as *Project 1968* (Alexander, 2011) in which two people playing the role of fictional characters pretended to be involved in a historical event using documents such as photos and diagrams; the narrative unfolded through hyperlinked posts.⁶

The Web 2.0 breakthrough has favored new creative forms of individual storytelling such as podcasts and vodcasts on music and video-sharing portals. Users who produce content regularly post their mostly individual reflections and diary-like entries interspersed with self-representations, and content-sharing portals allow subscribers to be notified of new episodes.

Many individual creative initiatives can be implemented on new media platforms. In a more documentary-like form of vodcasting, the *lonelygirl15 project*, a series of short YouTube posts showed the daily life of a teenage girl through self-recorded videos lasting a few minutes, deliberately manipulated its followers. The posts, actually written in advance by a scriptwriter and performed by an actor, created the vodcast's formal characteristics: the protagonist and some of the characters in the fictional life story logged in from the girl's room, dressed in clothes and speaking the language typical of adolescents. A community of commentators slowly formed around the videos as the fictional character's life events took an astonishing turn, and over the course of two years, the story ended with the death of the girl, much to the community's dismay.⁷ By the end of the project, the posts were revealed to be episodes of a series. The narrative that unfolded in the vodcasts gained a huge following, and subsequently generated a range of spin-off content that complemented the narrative of the original series.

In the world of Web 2.0, users interactively participate in media dialogues, and participatory behavior can be complemented by content production. Storytelling through digitalization is enabled by mobile devices, which can be used to create and publish any kind of posts, whether written, visual, or multimedia. On social media platforms and content-sharing portals, formatting templates and filters enable users to produce amateur content. External applications are also available to create visual and multimedia narratives using a smartphone easily.

⁶ <https://www.dc1968project.com/>

⁷ <https://www.youtube.com/user/lonelygirl15>

All this means that multimedia content is appearing on social media at a massive rate every second. The Web 2.0 environment is full of stories, with unlimited accessibility and no barriers to sharing them. *Micronarratives* have emerged to meet the needs of users who are always online, experiencing a constant flood of information and who are therefore only able to absorb short pieces of content. The social media content stream is dominated by these short pieces of content, which are easy to create, share and consume – from *Twitter* posts of up to 280 characters to *Instagram's* storytelling categorized by images and hashtags, to the use of gifs. The gif is a micro-narrative between a still image and a video with minimal expansion, expressing mood and entertainment. In the new micro-narrative storytelling world of social media, images, memes, micro-texts, and micro-videos dominate, contrasting with the larger, traditional written content of blogs, news portals, and podcasts.

Since the 2010s, the social media platforms have been proliferating that have primarily been based on the serial nature of video and image sharing. Content producers (i.e. professional *influencers*) aim to build up a massive following on video-sharing platforms and social media influencing their followers with their views and appearance. These micro-content producers target their followers by advertising products, and the sponsorship they receive for their advertising depends on their number of followers.

However, amateur users of internet applications and platforms are not only individual content producers; Web 2.0 platforms also enable collaborative storytelling, most obviously through the Internet's largest collaborative encyclopedia, *Wikipedia*, and through applications that create a shared visual and multimedia narrative (such as *Google's* applications). Alexander (2011) also finds image-sharing sites suitable for collaborative storytelling in Web 2.0, citing *Flickr's Tell a Story in 5 Frames (Visual storytelling)* project as an example, in which users told a whole story without words using five images.⁸

In summary, the digital narratives of the first decades of the 21st century are determined by media convergence, hypertextuality, and are characterized by conciseness, interactivity, and participation. Forms of expression through traditional and new media have a combined impact on the stories that are made public through digitalization, as the type of media can vary according to the type of message. At the same time, the hypertextuality of the Internet breaks the conventions of linear storytelling and creates branching, networked structures in the narratives of the 21st century. As people who use smart devices for navigation and entertainment encounter information in large and unlimited quantities, effective messaging must be delivered in compressed form. In the new millennium, we are no longer talking about recipients – audiences, viewers, listeners or readers – but about users who interactively participate in the creation of narrative.

⁸ <https://www.flickr.com/groups/visualstory/>

How have these technological innovations affected human storytelling habits? Alexander (2011) and Handler Miller (2004/2020) interpret the notion of narratives created through digital means broadly, including transmedia texts and computer games alongside hypertexts. Alexander (2011, p. 40) refers to digital storytelling 2.0 as all multimedia phenomena in the world of Web 2.0 that are at the intersection of storytelling, gaming and social media.

The storytelling of the 21st century is characterized by the interactivity of the audience, cross-media presentation and the use of branching, modular narrative forms. In the following chapters, 21st-century forms of 20th-century multimedia storytelling and new media narratives will be examined. Chapters 3 to 6 discuss in detail the storytelling conventions that emerged around the turn of the millennium, which, while sharing many common features, are different in terms of their application and methodological backgrounds.

CHAPTER 1.

STORYTELLING ON SOCIAL MEDIA AND CONTENT-SHARING PLATFORMS

The first interactive storytelling platforms of web 2.0 to be discussed are blogs, which contain posts in diary format. A new form of collaborative authorship is being implemented in the content creation of blogging communities. On the one hand, shared access allows multiple authors to publish on the same thematic blog, which on the other hand allows readers and other authors to react to each other's posts. The world of blogs created the communication and publishing conventions that have been applied on social media and content-sharing platforms.

Since the emergence of Web 2.0, stories are no longer told by a single author or filtered and moderated by editors. The verbal, visual or audio-visual narrative of a post published on a content-sharing portal or social media platform and the comments form the narrative, which the user can shape by adding further comments. The endless, open-ended narrative form of the 21st century has emerged: the content of a Web 2.0 narrative can be constantly updated and modified by adding comments that cannot be limited in terms of time or quantity. In addition to the unfinished nature of such narratives, two other issues arise. The first is how the user reconstructs the story itself from the infinite number of existing online narratives of the same story. The other question is how, despite the disappearance of editors, posts and comments can be manipulated on Web 2.0.

Previous anthropological, sociological, historical, and narratological studies have focused on the reach of posts and comments on today's social media and content-sharing portals, as well as the communication routes and tools by which the collectively constructed narrative is created.

Visual representations on social media present a compressed moment in the form of a story. The content of the photos is usually stereotypical: an index image of a specific narrative structure. Based on a fragment of reality, the recipients complete the narrative and reconstruct the story. Private photos on social media referencing episodes of individual life stories have idealized content, sometimes manipulated by filters, but always symmetrically composed. The story behind a beach sunset evokes the narrative of an ideal and exciting holiday; the adolescent girl washing her hair in the mirror evokes a story of a first date; the photo taken at the gym hides the heroic struggle of the user to stay fit, and the picture of the Christmas tree and a child's first day at school evoke the intimate family and social rituals of the user.

The other characteristic visual narratives of social media are memes referring to collective experiences. These memes are usually first shared in thematic social media groups and then spread through individual re-sharing. The visual information is linked to a narrative that is meaningful to a given community, being linked to a cultural product (typically iconic scenes from famous films), cultural stereotypes of a community, or visual content linked to a current news story.



Figure 1. Distance education as experienced by teachers (Facebook)



Figure 2. Grandmother waiting for guests
(Facebook, Squatting Slavs in Tracksuits group)

For example, *Figure 1* recalls the collective experience of teachers when students disappeared from a video call during the distance learning period caused by the Covid-19 pandemic. *Figure 2* evokes the nostalgic story of the Eastern European recipients as the grandmother in a humble home invites her weary grandchild to a bountiful feast.

Political communication has also adapted to the conventions of social media communication. Public figures and politicians share micro-narratives, personal photos or short videos on their social media platforms on a daily basis. An example is the social media communication of Hungarian Prime Minister Viktor Orbán's staff. In some of his posts, the Prime Minister personalizes and promotes government measures. In other posts, he evokes the character of an ordinary man in the community, who meets people and reinforces the feeling in the recipient that he is one of them. The politician's everyday activities appear in a series of social media posts. Around 90% of the pictures and videos he uploads show his interactions with the average Hungarian middle class, often while consuming food and drinks that are considered to be Hungarian. Examples include the Prime Minister eating 'lángos', or images of him actively participating in typical Hungarian winter or summer food preparation rituals. Photos of the Prime Minister stuffing sausages, preparing pickled cucumbers or slaughtering pigs (*Figure 3*) circulate like memes on social media and trigger extreme reactions from the public in the comments sections.



Figure 3. Viktor Orbán takes part in a pig slaughter. 3 different posts (Facebook, Viktor Orbán's official page, 15-16 January 2022)

The micro-narratives of some themes appear at certain intervals, while the series of images related to Hungarian folk rituals are posted on social media on consecutive days. Snapshots of the pig slaughter on Facebook followed each other in a total of 17 posts between the 15th and 16th of January in 2022. Typical visual stereotypes can be seen in the images of the three posts (Figure 3) that can be interpreted by all Hungarian users. This kind of redundancy reinforces the message of the communication.

The media presence of political personalities and parties before the emergence of Web 2.0 was achieved through the selection of gatekeeping editors. On social media, however, politicians speak directly to the people and have thus eliminated the process of editorial selection. In the last decade, independent political parties and personalities have been more and more present on social media, and their communication with the electorate takes the form of compressed micro-narratives. As Szécsi puts it

[...] the most effective means of influencing social target groups are those narratives that are best suited to conveying values and principles, and that offer a continuous framework of interpretation for the target audience to work through specific issues and problems [...]. Members of the new mediatized communities are less and less interested in media narratives constructed from the perspective of political communities, and are more interested in narratives born in the world of social media (Szécsi, 2016, p. 103).

In social media, the communication of objective facts has less impact than the sharing of emotions and personal opinions. The phenomenon can be connected to the notion of *post-truth* which entered the public consciousness after the 2016 US elections and the Brexit vote in the UK (Ramirez-Alvarado, 2020). In post-truth political communication, citizens are not convinced by facts and competence, but by opinions, attitudes, and lifestyles, which are best communicated through narrative structures and the channels of social media. Politicians use influencer techniques to address citizens directly in short posts instead of long rhetorical messages: they show how they reconcile their private lives with politics, represent their everyday lives according to social norms

and gender stereotypes, and sometimes even include humorous elements. Such posts are powerful tools to convince citizens that the politician is one of them. At the same time, communication via social media allows citizens to express their opinions with reaction buttons or comments. However, participation and communication are illusions; although politicians' messages on social media give the appearance of direct, personal discourse, they actually represent *infotainment* and aim to attract attention and achieve engagement (Hernández-Santaolalla, 2020) in a phenomenon that Nieland (2008) calls *politainment*. Another narrative strategy used by politicians, especially during campaign periods, is to incorporate the plots, memes, and twists of currently popular HBO or Netflix series into their communication, reflecting the intertextual aspect of *politainment*. This is illustrated by Spanish political parties' use of visual and audiovisual meme references to the series *Game of Thrones* (Bellido-Pérez & Donstrup, 2020).

Such posts have a compressed narrative but also provide an opportunity for interpersonal contact and a discussion of shared experiences. Social media allow content creators and content recipients to be accessible to each other and to communicate directly, satisfying their need for social connectivity. Micronarratives thus also engage participants in a shared media rite of passage. These posts do not merely communicate that a politician has eaten a sausage or slaughtered a pig; the information is situated in a wider symbolic context. This type of communication can be interpreted in light of Császi's (2002) theory of media rites. Császi interpreted media rites in Durkheimian terms, arguing that media place events taking place in a physical space and time in the symbolic space and time of rites, thus giving cultural meaning to social phenomena. Popular media, and thus the hybrid world of social media, allow the beliefs and norms of a community to become manifest in this way. The social rituals that appear in social media storytelling offer the possibility of direct connection and shared moralization.

Micronarratives evoke emotional attachment and identification with, or even denial of a particular value system and have the power to maintain and shape identity. Social media communication by political actors can be likened to an extended interactive election campaign. In the micronarratives, narrative structures emerge that are based on the restoration of moral order, and on the representation of actions that can be associated with the hero. Negative rites of passage are also evoked in political social media communication: posts with scandalous events involving opponents receive almost immediate publicity. The presentation of deviance in relation to the party's values is intended to provoke the dissociation of users. Identification or dissociation can be expressed by the user through reaction buttons, comments or by sharing the content and thus promoting it to his or her own circle of acquaintances. These individual shares are then followed by further reactions, so that storytelling continues through the act of repetitive sharings. Despite the fact that storytelling continues on social media as users reflect on the

content, it can be said that micronarratives as a stand-alone visual entity or as part of a series can themselves evoke stories from their recipients.

Social media posts with political content have agenda-setting value aimed at voters with a similar viewpoint to the politician. Web 2.0 political posts can shape the views of followers through the symbolic ritual power of micronarratives, the reinforcing effect of serialism and redundancy, and the enforcement of visual and verbal stereotypes. At the same time, social media posts allow citizens to engage in public discourse. The value preferences and identity constructions of individuals are also well represented in comments sections and shared content. Moreover, the media literacy of the user may also be revealed through his or her critical or uncritical selection of content.

While social media seem to have democratized the public sphere, the question arises whether it is a medium for multi-viewpoint information. While the freedom to share and comment is open to all users, social media is far from providing a broad spectrum of multi-viewpoint information. Content selection already manifests itself in the way users choose social media friends, user communities, brands to follow and sources of information according to their preferences in terms of contacts, interests, and worldviews. On the other hand, content selection is also reflected in the fact that social media news feeds offer users personalized content. Content prioritization algorithms take into account users' personal interactions, shares, likes, comments, and even geographical location, leading to the creation of *opinion bubbles* – an environment of information reflecting the user's interests and beliefs (Veszelszki, 2021). The content selection also occurs outside the world of social media, where the search for online content is controlled by algorithms developed by large companies (e.g., Google and Netflix) which thematize the search results and the order in which they appear (Szűts, 2021). At the same time, *bots* that operate on algorithmic principles may write comments under a post. This calls into question the authenticity of full user access and the democratization of Web 2.0 content services.

The credibility of online information has been a matter of debate since the advent of the Internet. In the early 2000s, the central issue was the question of the legitimacy of news portals and professional blogs, and wikis (Tófalvy, 2017), but nowadays, regardless of the platform, the most serious challenge in the online public sphere is to distinguish between inauthentic and authentic information.

Mass social media use also affects the way people keep up to date with the latest news. In the social media newsfeed, the user finds news shared by friends and the micro-content from the news providers they follow. However, in addition to editorial communication, individual self-reporting and news reflections, *fake news* imitating the formal and narrative characteristics of news communication is also flourishing on social media, which provides an exceptionally favorable platform for its rapid spread.

Fake news texts and hoaxes attract tabloid content-hungry users through tabloid-style headlines, sensationalist headlines and photos, and withholding information. Veszekszki (2017) characterizes fake news communication as 'clickbait'. Clicks often also lead to the sharing of content, which guarantees the rapid spread of the content and further clicks, and thus economic gain. Social media also spread political fake news. Photoshopped images and deep-fake videos are particularly manipulative tools for spreading false or fake information, as their ultra-realistic nature makes users believe that a person has been to a place or made a statement that contradicts their true beliefs. Such content can also be used as a tool for political disinformation campaigns (Veszekszki, 2021). Aczél (2017) has pointed out that the interpretation of social media as a source of news evokes an ancient, communal model of information exchange, and therefore considers netnography, which is able to explore the creation, spread and socio-cultural impact of viral content, as a suitable tool for the study of fake news.

CHAPTER 2. THE METAMORPHOSIS OF 20TH-CENTURY AUDIOVISUAL NARRATIVES IN THE 21ST-CENTURY

A new feature of millennial cinematic narratives is their complexity. In order to reconstruct the story, the viewer must creatively look for logical connections between the fragments presented. Instead of the linear narrative characteristic of Hollywood genres appealing to mass culture, nonlinear or elliptical narratives are increasingly prevailing. Good examples of puzzle narratives include the mystical time travel crime series *The Dark* or the films of Christopher Nolan.

Cameron (2012) refers to complex Hollywood scripts as modular narratives, in which timelines do not follow a traditional linear pattern; instead, the units of time are presented as modules in the plot, so that the narrative of events is not presented in a chronological but logical order. Such a narrative is built up from sequence modules, as in millennial nonlinear film narratives where the plot starts from a fixed point from which different plot alternatives branch out in the narrative (for example in Kieslowski's *Blind Chance* or Tykwer's *Run Lola Run*). Another type of branching narrative is the presentation of alternatives episode by episode (e.g., Howitt's *Sliding Doors*) (Bordwell, 2012). Branching narratives also appear in series, for example in HBO's *The Affair*.

Alexander (2011) identifies a new form of digital narrative creation at the intersection of social media and gaming, and uses McCloud's (1994) notion of sequences instead of modules to describe the nature of digital storytelling; like comics, narratives in a digital environment are sequential in nature, being constructed from temporal fragments. The modular-sequential narrative structure (which allows for flexibility in branching), puzzle narratives and

the possibility of viewer interactivity have fundamentally transformed the typical audiovisual narratives of the 20th century.

2.1 Interactive Television

The Web 2.0 revolution of the early 2000s and the competition created by media convergence meant that television had to adapt to new expectations and actively engage viewers. The viewer was not allowed to intervene in the program flow of the previous one-way mass media structure, and interactivity could only be achieved through the use of telecommunications before the introduction of the Internet. Such formats were talk shows, talent shows and, teleshop shows that encouraged engagement with viewers through text messaging.

The first narrative-based television program in which viewers could be involved in the program's content by phoning in was the BBC's *What's your story?*, a show aimed at children (Koltai, 2010). A similar experiment was conducted in Hungary in 1994 by János Horvát, whose program *You decide!* was broadcast by Hungarian public media on Fridays during prime time. The basic concept of the program was that an external narrator (János Horvát) would appear at the turning points of the television narrative which fell on the border between crime and melodrama, asking the viewers to vote on the decision the characters should make in the given situation. In the early years of the millennium, a Hungarian cable channel, Budapest Television, broadcasted a highly tabloid form of viewer-television interaction. Anettka, the face of the private channel, waited half-naked for viewers to call her at night, who made obscene phone calls to her as expected by the program producers.

In addition to text messages and phone calls, since the Web 2.0 revolution viewers can use mobile phone apps to vote for their favorite characters in a quiz, reality or talent show, or even take part in prize draws. These apps also allow viewers to express their opinions about public issues in quasi-polls on infotainment shows, and text-to-screen apps for morning shows allow viewers to post short messages on the bottom bar of the screen (Koltai, 2010).

With the spread of digitalization at the turn of the millennium, television has managed to keep pace with new media on the Internet through convergence and interactivity (Jenei, 2007). Gordillo (2020) argues that media convergence and the inclusion of the second screen have blurred the boundaries not only between television genres, but also between fictional and documentary narratives, as well as between the public and private spheres.

The trend of interactively involving the viewer is growing not only in television programs, but also in feature films. Bártfai (2011) writes about interactive film as a new narrative technique in the new millennium. The involvement of the audience in the shaping of the plot is not without precedent in the history of narratives, as a specific form of adventure play is based on a

similar principle, where the audience can make choices at important turning points in the plot of a book or computer game by means of a dice roll or conscious choice. In the same way, the viewer becomes a participant in the interactive film narrative, actively intervening at certain points in the narrative.

The modules of interactive narratives that involve the viewer in the development of the storyworld must fit organically into the branching structure, so that episode alternatives are created as a continuation of turning points, with the choice of certain turning points introducing episode alternatives and thus providing different endings.

A prerequisite for the active involvement of the viewer is a medium that allows for the manipulation of the plot. One possible way to achieve interactivity is for users to add comments to episodically linked posts on video-sharing sites, which are then taken into account by the scriptwriters when writing the next episode. Alternatively, the viewer can click on a button or caption integrated into the video to select a plot branch at a turning point in the narrative. The creators known as Chad, Matt & Rob have published a total of five interactive narratives on YouTube in different genres since 2008. Each film is broken down into episodes of a few minutes, at the end of which the viewer is presented with an integrated video of the two choices.⁹

An example of interactive storytelling which also allowed for a change of point of view was successfully implemented by HBO in the *HBO Voyeur* (2007) and *HBO Imagine* (2009) projects (Bártfai, 2011). The HBO Voyeur project allowed the viewer to gain insight into the lives of eight families in a New York apartment building based on viewers' own choices. Content related to the narrative was available on fictional blogs, social media posts, as well as image and video-sharing sites. In the HBO Imagine project, a giant cube was set up in three major US cities, with four sides of the cube showing the plot versions of a story from the point of view of different characters.¹⁰ The viewer could stand at the edges of the cube and see the same scene from the point of view of two characters simultaneously. The full story could only be reconstructed by viewing all four sides of the cube. On the HBO website, the viewer could also change the four points of view by navigating with the mouse.¹¹ One of the two stories told was *The Affair* (2014-2019), which was later told over several episodes, albeit with a different cast and in a more complex way. The other story told from four points of view on HBO Imagine was called *The Heist*¹². The same museum heist story was also shown interactively as a YouTube Original in 2019.¹³ The episodic, branching narrative follows the structure introduced by Chad, Matt and Rob: at the end of each scene, the viewers are presented with a decision and must click on the pop-up of

⁹ https://www.youtube.com/watch?v=W3lsu-r_xBw&list=PL359371BCEB574A6B

¹⁰ <https://www.youtube.com/watch?v=UWVeFt3IyoI>

¹¹ <https://www.nickgaul.com/hbo-imagine>

¹² <https://www.youtube.com/watch?v=VgJGIcbSM10&t=375>

¹³ <https://www.youtube.com/watch?v=9TjfkXmwbTs>

the video they want to continue the story with. The 61-episode show-play narrative has 31 possible outcomes. The involvement of the viewer, and thus a more intense experience of interactivity, is reinforced by a cinematic language trick: the use of a subjective camera. The main characters of the story are the robbers, played by a famous American YouTuber Markiplier (Mark Fischbach) and the viewer. Markiplier is constantly talking to the viewer, creating a virtual quasi-conversation while looking into the camera.¹⁴ The creator has previously published a similar style of interactive comedy entitled *A Date With Markiplier*, which was released on Valentine's Day in February 2017.¹⁵

In the late 2010s, HBO sought to take advantage of the latest technology to achieve viewer interactivity. After the second season of the highly successful *Westworld* series, in 2018 it launched a game on its 360i platform called *Westworld: The Maze*.¹⁶ In the game, the interactors can select the elements using their own voice. The game features 60 narrative paths and 32 different deaths that the interactor can experience.¹⁷

On Netflix there are more and more animated and feature films featuring interactive versions, where viewers can navigate through non-linear sequences using remote controls, game consoles and smart devices. The streaming service first launched a standalone interactive narrative for adults in 2018 with the longest episode of the famous *Black Mirror* series entitled *Bandersnatch*. The narrative has twenty possible endings and varies in length from 40 to 90 minutes depending on the viewer's choices. Through the choices, the viewer is placed in moral dilemmas while watching the film; if the viewer feels that the wrong choice has been made, he or she can return to the point of the previous decision (Pătrășcanu, 2021). In the case that the viewer does not make a choice, the next scene is chosen randomly. Another interactive show on Netflix is Bear Grylls' eight-episode interactive reality show *You vs Wild*.¹⁸

2.2 Narrative Video Games

Video games are built on narrative schemas to varying degrees. Narratives are least common in casual, task-solving games played on mobile devices, and are more common in video games where the player is asked to unravel the mysteries of a story. The majority of video games, however, fall between these two extremities and are characterized by a narrative framework for the tasks performed in the game.

¹⁴ <https://thestoryfix.blog/2019/10/23/trailer-youtubes-first-interactive-series/>

¹⁵ https://www.youtube.com/watch?v=yyU_1JD2wuA

¹⁶ <https://www.360i.com/work/westworld-maze/index.html>

¹⁷ <https://www.dentsu.com/hu/hu/munkaink/case-studies-360i-hbo>

¹⁸ <https://www.netflix.com/hu/title/80227574>

The design team for such video games has three main tasks: designing the non-narrative elements which are unlocked during the game (e.g., levels and gift points), creating the narrative module system with challenges appearing at dramaturgical milestones, and creating the programming logic. The scriptwriters of the games create the context and setting for the scenes and prepare the dialogue for each plot branch with a concise and consistent logic. The storyboard of a video game is therefore not linear, but can be compared to a branch diagram. However, the most important task of the scriptwriters is undoubtedly the development of the characters, since the central characters (i.e., the protagonist and antagonist) are the driving forces of the plot. The antagonist can be a controlling figure, a competitor, the embodiment of evil or a character who is an obstacle because of his or her incompetence. Regardless of genre, Jungian archetypes recur in the characters of video games, such as the wise old man, the trickster, the beautiful girl/young man, the seducer with magical powers, or the mother and the child (Berger, 2020).

Even when choosing a video game, the player has choices to make. Computer games can be grouped by access, number of players and genre. Access can be interpreted at several levels, using the dimensions of subscription or purchase vs. free, technologically savvy user-oriented vs. technologically unsavvy user-oriented, and online vs. offline. In terms of number of players, there are *single-player* and *multiplayer games*. Different genres can be linked to different game objectives, and can be basically described as strategy, simulation or adventure games. The first video games based on storytelling were launched in the 1990s and were inspired by famous Hollywood blockbusters. At the turn of the millennium, games were typically based on crime genres (typically gangster stories) as well as action or horror films, containing thrilling plotlines and heroic characters.

In games, progressing through different paths and completing tasks also means progressing through the narrative. However, in the new generation of video games the player actively shapes the plot. The modular scenario framework allows for multiple paths and story endings. Tóth (2011) argues that in a video game the simulation chain of events completed by the player (i.e., the gameplay itself) is the plot from which the player reconstructs the underlying story framework. Tamás Pólya (2020), on the other hand, compares the narrative framework of video games to a jungle gym or obstacle course which forms the skeleton of the game's puzzles. In his argument, he emphasizes that in the case of video games the player does not develop a reading and interpretation triggered by the narrative, but rather focuses on the presence and task-centeredness of simulation interactivity which presupposes participation through controlling, manipulating and creating rather than active reception.

The immersion in narrative, interactive video games is enhanced by the use of *mis-en-scène* elements typical of Hollywood film narratives such as perfectly crafted visuals and the harmony of the background music and

sounds. In addition to immersion, the player's attentional functions are also activated during gameplay as he or she is put into continuous problem-solving situations, all of which together lead to a flow experience (Tamás Pólya, 2019). In real-time online multiplayer gaming, the gaming experience is complemented by social interactions and joint problem-solving.

Separate types of video games are single-player video games based on story reconstruction that have been on the market since the second half of the 2010s. Elements of film language and non-diegetic background music help the player to interpret the plot. In storytelling video games, Hollywood mass cinema genre conventions are mixed with complex, puzzle-like scenarios. Game designers adapt the frame narrative and predictable episodic elements to the narrative clichés of their chosen genre, but they also have to include unexpected events and surprise twists into the plot to enhance the gaming experience.

Video games with storytelling can be divided into two groups: those in which the player actively interacts with the storyworld from the internal, subjective point of view of one of the characters or those in which the player acts as an external voyeur in the unfolding of events. In the first case, the narrative is in the first person, while in the second case it is in the third person.

The basic concept of the fictional crime games entitled *Her Story*¹⁹ (2015) and *telling lies* (2019) created by writer and director Sam Barlow is that the player, as a detective, searches databases in any order and builds a murder story from the fragments. The player is a complete outsider, and the fragments are video fragments in which the protagonist's dialogue is only audible through the dialogue partners' texts, so that only the reactions of the other party develop the character of the man and the story itself. The player becomes immersed through the research process and story reconstruction, and the navigation through the story is completely free of any linearity, as the player can search the virtual database at will. However, the reconstruction of the causality and chronology of the narrative is only seemingly random, since the story elements that follow later in the story are not accessible at the beginning of the game. The database can be searched by keywords, but the number of results is limited and not all keywords are available.

Epistemic, story-related mysteries are the basis for many first-person adventure, thriller or horror games. In *Tell Me Why* (2020), locked doors in a house must be opened to reveal the full story of a murder 10 years earlier. The player's reconstruction of the story is aided by the opening of doors in a specific order and by the protagonist's memory flashbacks. One function of these memories is to help the player reconstruct the story, but they also provide key information for the next door to be opened – which is ultimately needed to reconstruct the story from the past.

¹⁹ <https://www.youtube.com/watch?v=gaHw97l7-Lc>

Call of the Sea (2020), an early 20th-century first-person adventure game, has a similar structure. In the plot, a sick woman searches for her husband who disappeared on an expedition. The player has to solve complex puzzles related to the story and make an important decision at the end of the narrative which can lead to one of two possible outcomes. The player can also take the perspective of a family member in the adventure game *What Remains of Edith Finch* (2017). The characters are relatives and have to re-enact past events and family stories related to the legacy of a large house.

The vast majority of mystery-solving storytelling video games have a wide range of narrative variations thanks to choices that appear from episode to episode which can be decision-based or luck-based; in horror games there may be skill-based limit situations (for example, a scenario in which the player has to hide in a corner and is forbidden to move the controller). In thriller- or horror-based video games the narrative is often in first person. In survival horror games such as *Man of Medan* (2019), *Little Hope* (2020) or *Until Dawn* (2015), iconic predictive help elements support the player in decision situations and predict the good or bad outcome of the episodes (e.g., images on the wall in *Man of Medan*, totems in *Until Dawn*, and leaves in *Little Hope*). Twist endings are common in decision horror, and because multiple outcomes are possible, these games can be played through multiple times.

However, for the majority of gamers it is not the interpretation of the narrative that is the primary focus of a video game, but the simulation interactions. Therefore, video games can be considered ergodic literature since they require more effort than mere viewing as well as the player's own procedural-motor contribution to their reception based on certain rules (Aarseth, 1997, cf. Tamás Pólya, 2020). The video game is thus “a textual initiative waiting to unfold” (Tamás Pólya, 2020, p. 97). This also explains why, although frame narration is important in video games, players focus their attention on task solutions rather than on analysing the narrative of the text, the motivations of the characters and the moral message.

Cross-media phenomena linked to video games are also on the rise. Examples include game streaming, where a player provides entertaining and analytical commentary on his or her own gameplay; e-sports tournament broadcasts, where an external commentator analyzes the matches of a video game tournament; and the emergence of Youtube gamers who share the solutions to game tasks with their fans. The free *Twitch* platform allows live, official streaming of games, while videos reflecting on the games themselves are shared primarily on YouTube. Major cable operators also offer a pay-TV channel for gamers, which broadcasts games from famous streamers and e-sports tournaments.

CHAPTER 3. TRANSMEDIA STORYTELLING

Transmedia storytelling is a complex narrative architecture that has evolved in the world of media, film, video games, marketing and branding whose conventions combine participatory media culture with media convergence. As Jenkins puts it:

Transmedia storytelling represents a process where integral elements of a fiction get dispersed systematically across multiple delivery channel for the purpose of creating a unified and coordinated entertainment experience. Ideally each medium makes its own unique contribution to the unfolding of the story.
(Jenkins, 2006)

As the name implies, the narrative is extended through different forms of expression and across multiple platforms. Each medium contributes its own particular form of expression to the unity and enjoyment of the unfolding story. Transmedia storytelling is a complex of narratives in which a larger narrative is complemented by narrative elements across different media. A key term in the field is the central narrative, also called the *mother ship* (Ryan, 2016).

The aim of transmedia storytelling is to maintain the engagement of the target audience, which is achieved by supplementing the storyworld with different perspectives. The more of these narrative transmedia supplements the user consumes, the more immersed he or she becomes in the storyworld. Examples of such transmedia supplements include *spin-off* series or supplementary video games in which a minor character in the mother ship work becomes the main character. A well-known transmedia supplement is the voting by the audience that takes place in certain talent shows, since the story of the competition is only completed once the audience has voted.

The expansion of the fictional storyworld, while costly, generates significant profits for companies. Within the world of transmedia storytelling, Jacob (2021) distinguishes transmedia in Hollywood entertainment franchising, which is primarily for advertising purposes (e.g., the *Harry Potter* films) as not all franchises maintain engagement among their fanbase through storytelling (advertising properties are typical examples). Jenkins (2009a, 2009b, cf. McAdams, 2016) makes the point that transmedia storytelling needs to be distinguished from transmedia advertising for commercial purposes.

Conceptual differences such as these raise the question of what is *not* transmedia storytelling. Transmedia storytelling is not to be confused with cross-media presentation of the same story through different media, where the basic story is presented in the same way or with minimal modifications in another medium – such as the film adaptations of the *Twilight* books. In contrast, *The Avengers* can now be seen as transmedia storytelling, as the films

differ significantly from the original comic book as new characters and plot threads appear in it, and an expansion of the storyworld can be observed through other media (Jin, 2020a).

Thus, the presentation of a narrative on different platforms can be clearly excluded from the category of transmedia storytelling, considering that a reader is still reading the same narrative regardless of whether the book is published in e-book or print form. It is therefore a key question whether adaptation can be considered transmedia storytelling at all. According to Jenkins (2010), adaptation is a representation of the same narrative through a different medium and, in this sense, a redundancy of content. Adaptations do not add new characters and episodes to the storyworld, and in this sense, they do not represent transmedia expansions. However, we should not forget that although the story may be identical, the plot and the representational properties of the medium may provide different aesthetic experiences for the audience. The boundaries of transmedia storytelling are difficult to define, as the use of multiple platforms is not always transmedia storytelling. Transmedia storytelling is the narrative extension of the storyworld revealed in the central narrative presented through different media.

Transmedia storytelling is not limited to digital platforms, but is often present on digital platforms and applications. Narrative representation can adapt to the medium's representation forms. The majority of new media allow not only reception and individual interpretation, but also the active participation of the user in shaping the extended storyworld. Many platforms are designed with user participation in mind, allowing the recipient to break the fictional framework through interactions and interventions, extending the narrative into the world of the participant-recipient user.

Narrative transformations through user interaction are added to the storyworld when a new media platform is used. At the same time, new media must also take into account the representational possibilities of stories. Narrative extensions on new media platforms, especially social media, are compressed in order to adapt to the specificities of the platforms and user habits. Miller argues that in our *snack culture*, users consume quickly and easily accessible narrative fragments of minimal narrative formats created on digital platforms (Miller, 2007, cf. Jin, 2020a). This is a new habitus of information and culture consumption: users take in or reflect on fragmented micro-narratives during their free time via mobile devices.

The extended transmedia narrative can appear on many different platforms and in many different forms of representation. For a more detailed general definition, Jenkins' (2009a, 2009b) seven principles (cf. McAdams, 2016) are helpful, with the most relevant ones listed below:

Spreadability vs. Drillability

The opposites above represent a fundamental spectrum of reception. Transmedia storytelling is characterized by its shareability and ease of

dissemination, and thus by content that is presented horizontally across multiple types of media. By contrast, non-transmedia storytelling is characterized by a deeper, more in-depth single narrative.

Continuity vs. Multiplicity

In transmedia storytelling, the storyline of the mothership narrative continues. A sense of continuity is a real reward for fans, who feel that the more authentic the storyline, the more strongly it is reinforced by the extension. The narrative continuity around *Marvel's* superheroes is a good example of transmedia entertainment for the most dedicated fans. By having characters from one narrative appear in another narrative, the storyworld is expanded, continued and made more complex rather than multiplied. Continuity is the extension of the story universe of the mothership narrative, while multiplicity applies more to the franchise-type cross-media promotional activity of closed narrative products.

Seriality

Transmedia storytelling is a hyperbolic series; although the narrative extensions appear in a serial system, they are located in different, dispersed media systems.

Performance

In transmedia storytelling, fans actively contribute to the expansion of the storyworld by creating discussion forums, producing memes, remixing iconic scenes, or participating in cosplay events. Thanks to fans, an infinite number of transformations and additions to a mothership story can be made.

A complex definition of the phenomenon allows us to identify the different scales of transmedia storytelling. One of the best-known fictional transmedia universes is built around the film adaptation of J. R. R. Tolkien's fantasy novel *The Lord of the Rings*. Like the novel, the film trilogy is a sequel to the author's earlier work, *The Hobbit*, so the filming of the prequel was one of the extensions. A further extension was released in the form of a video game (*Middle-Earth: Shadow of Mordor*, 2014), in which the story of some of the films' supporting characters was played out. The video game's plot is set between *The Hobbit* film trilogy and *The Lord of the Rings* film trilogy. The transmedia storytelling was reinforced by Franchise-style advertising, websites, cards, board games, and comic books. The method and order of consumption and reception can be arbitrary. Similar examples are the three parts of the horror film *The Blair Witch Project* (1999, 2000, 2016) and the survival horror game *Blair Witch* (2019) which complements the story. The game, with its first-person perspective, places the player in 1994, two years after the first film.

High-concept series keep viewers' interest for years thanks to their mosaic narrative structure and serialized presentation. Typical transmedia extensions seen today are the spin-off series produced for iconic series, typically featuring

the prequel to the mothership series or an interesting side character from the mothership series as the main character in a series with a separate storyline but the same story (e.g., the spin-off of *Breaking Bad* is *Better Call Saul*). *The Handmaid's Tale* is an interesting example of transmedia storytelling, as only the episodes of the first season were based on Margaret Atwood's 1985 dystopian novel, while the rest of the series was created as a transmedia extension of Atwood's storyworld. Although the author has written a sequel to the novel, the story of *Testaments* (2019) is different from seasons 2-4 of the series.

The creators of the *Lost* series engaged in transmedia storytelling by creating new fictional characters who were never seen in the series. These characters added segments to the series on different platforms: one wrote a diary and the other starred in a video game. The creators also added 13 videos to the storyworld, which could be accessed through a smartphone app (Scolari, 2013).

The mothership narrative can also be extended on a Web 2.0 platform. *The Lizzie Bennet Diaries* is a vlogged adaptation of Jane Austen's novel *Pride and Prejudice* where viewers can add their comments to short YouTube videos and, as the main characters in the novel have social media profiles, fans can chat with the characters (Heredia-Torres, 2020). A mothership narrative itself can also be hosted on a Web 2.0 platform. BBC 3 has launched a transmedia campaign #FindTheGirl to promote *Thirteen* (2016), a five-episode online melodrama series about the escape of a woman imprisoned for 13 years. In parallel to the broadcast of the series, posts by a fictional investigative journalist appeared on YouTube and Twitter revealing important details of the investigation. The series depicted the woman's escape, and clues important to uncovering the crime were hidden in the episodes. The investigation was also interactive: the journalist's character responded to comments on social media, solving the problems of the investigation together with the viewers (McErlean, 2018).

Transmedia storytelling does not only allow for the presentation of fictional storylines. Because of media convergence, television genres have extended their narratives across multiple platforms. Typically, news programs with a narrative structure, live competitions and sports segments provide viewers with additional information via a second screen. Extensions are mainly used on social media platforms to allow viewer interactivity. For example, channels may provide more detailed information on their own social media profiles related to a piece of news or sports program, or give insight into the life events of a celebrity associated with the channel's brand. In addition to the channels, actors (e.g., celebrities, public figures, or media personalities) can also create their own social media profiles for fans and thus maintain the attention of their followers who make their posts part of their daily lives by following them regularly. Television programs are also supplemented by

articles from print periodicals (e.g., newspapers, tabloid magazines, and sports magazines).

Non-fiction narratives other than mainstream media communication can also unfold in transmedia form. On its social media platforms, the German broadcaster *Deutsche Welle* and ZDF regularly supplement their news and documentary programs with digital stories, short video documentaries and, vodcasts. Swedish *Aftonbladet* photographer Magnus Wennemann photographed the children of refugee families and named his series *Where the children sleep*. Wennemann took pictures of children sleeping in railway stations and forests, writing a few sentences under the photos conveying the story of their escape.²⁰ Reuters, on its *Wider Image* blog, supplements its news with personal stories delivered through text and images. The *Refugee families European odyssey* post tells the story of a refugee family's persecution and reunification²¹, while the *Traces of migrants' unfinished journeys* post reveals the tragedy of refugees drowned at sea through found objects (e.g., wedding photos, mobile phones, necklaces).²² The blog posts aim to break down the stereotypes of their readers by diverging from the agenda-setting themes and dominant perspectives found in mass media. Poverty and the lack of proper sanitation in a broader sense were highlighted in the transmedia posts *Around the world in 45 toilets*, which used an interactive map and photos to show 45 toilets from around the world.²³

Another sub-genre of transmedia storytelling is *immersive storytelling*, which offers additional elements to the narrative that can be received in physical space through VR glasses or QR codes. The term immersive refers to the fact that virtual storytelling is presented within the physical framework – for example, as a supplement to a thematic museum exhibition or as a supplement to a city walk (Pavlik & Bridges, 2013).

The Far Eastern media world has its own transmedia storytelling traditions. *Anime*, the animated adaptation of Japanese *manga*, has a history going back several decades. South Korea has created its own version of the comic book genre, *manhwa*, which is designed for smart devices and utilizes a narrative approach called *webtoon*, a fusion of the words web and cartoon. South Korean *manhwa* artists' work first appeared on websites in the 1990s. The first webtoons were initially digital stories in which cartoon drawings were used to tell the personal stories of their creators (Hancox, 2017, cf. Jin, 2020a). However, with the advent of smartphones, more and more specialized webtoon portals appeared in South Korea where visual content dominated and creators switched back from the audiovisual format to traditional drawn comics. The webtoon interfaces are characterized by the fact that the scenes are scrollable and arranged one below the other. The popularity of webtoons

²⁰ <http://darbarnensover.aftonbladet.se/chapter/english-version/>

²¹ <http://widerimage.reuters.com/story/refugee-familys-european-odyssey>

²² <http://widerimage.reuters.com/story/traces-of-migrants-unfinished-journeys>

²³ http://widerimage.reuters.com/story/around-the-world-in-45-toilets?utm_source=Facebook

can also be traced back to the practicality of the format, as they are free micronarratives that can be accessed visually on a smartphone. The other reason for their popularity is that webtoons are uploaded to the platform in a serialized, episode-by-episode format. The webtoon portals offer a selection of content based on different genres. The common thematic characteristic of all the genres is the critical attitude toward South Korean society, and the dialogues are characterized by light black humor. The stories are often about topics that young people can easily identify with: typical protagonists of webtoons are hard-working, exploited workers or recent graduates who are unemployed (Jin, 2020b).

Webtoons combine serialism, oriental narrative techniques and comic book aesthetics. In South Korea, many webtoons have been used to produce excellent films and video games. One example is the series *The Witch*, based on the famous webtoon by Kang Full. *Hellbound*, a socially-critical fantasy-horror-action series available on Netflix, is also based on the webtoon narrative format.²⁴

The question arises as to whether the webtoon and its film form represent an adaptation or a transmedia extension. While the films may add characters and narrative elements to the webtoons, and in the case of series the inclusion of audience requests may lead to differences in the narrative, Park and colleagues (2020) have nevertheless categorized the phenomenon as adaptation rather than transmedia storytelling (Park, Lee & Lee, 2020). However, the position is relative considering that the cinematic representation of fragmented, compressed comic book narratives in webtoons (and manga) provides a completely different dramaturgical representation of the same story.

Webtoon conventions are also relevant to transmedia storytelling as their hosting platforms support user participation by allowing users to create webtoon pieces in different genres and have followers similar to influencers. Webtoon platforms can also be connected to popular social media platforms which will alert followers when a user has posted a new episode. The creators of highly viewed webtoons can earn a significant amount of money if a large number of subscribers follow their work, and the most successful webtoons are often turned into feature films or series.

An examination of the Far Eastern model of transmedia storytelling can provide a number of models for Western transmedia storytelling practices. Steinberg (2020), examining the phenomena of intense transmedia storytelling that evolved from the Japanese manga-anime world, finds that the four pillars of transmedia storytelling are (1) the medium; (2) the storyworld; (3) the characters; and (4) the interconnectedness or continuity between the extensions. However, in addition to these it is also important to consider the cohesion of the communities of potential recipients and fans, so transmedia storytelling requires additional management tasks: (5) taking into account

²⁴ https://www.webtoons.com/en/thriller/hellbound/list?title_no=3598

the needs of the audience, the fans, and coordinating interactions; (6) mediating between interfaces; and (7) maintaining the recipients' interest in the storyworld in real time.

The hierarchical yet complementary narratives and narrative fragments of transmedia storytelling can only be examined in a complex way. Javanshir, Carroll, and Millard (2020) have developed a taxonomy that can greatly assist researchers in examining this multifaceted phenomenon. The first step in analyzing the transmedia story stream is to examine the narrative on each public broadcast channel to see whether it represents the whole narrative or is simply an addition to it. The next step is to explore the channel navigation path of the recipient: how the complementary elements lead to each other (e.g., through links, direct verbal instruction, or advertisements). It is also important to examine the extent to which the user's interactive participation is required to unfold the narrative on a given channel (e.g., a recipient may be interactive while playing a video game or taking part in an escape room, but passive when watching a film or play), and whether the reception is synchronous or asynchronous. Based on these aspects, three basic modes of transmedia storytelling can be identified. The first is when a fictional story universe is presented in several complete narratives on several channels. In this case, the channels are isolated from each other (e.g., film 1, film 2, play, book, and play). The second mode is the *portmanteau*, where a single story is told through multiple channels, but the micro-narratives can be read separately (e.g., website 1, website 2, characters on Facebook, and YouTube video). The third mode contains narrative elements which appear in different, branching channels, and the story is only understood through their simultaneous reception (For example, when an app is linked to a certain channel). In terms of the path of reception, the transmedia narrative can be linear (one channel points to another to determine the path), non-linear (the receiver decides the path) or cumulative (a mixture of the two).

Another possible approach to transmedia storytelling research is to examine, from the point of view of the audience, what the audience considers to be the mothership narrative in the complex construction and how they receive narrative extensions. In his research, Jacob (2021) investigated which of three major Hollywood fantasy transmedia productions were considered by German audiences ($n = 671$) to be the mothership narrative (i.e., the first narrative in the storyworld). The responses showed that 88.77% of the audience had first encountered the film and considered it to be the mothership narrative, followed immediately by online content, wikis and websites. Almost half of the movie-goers also read the original book after watching the movie, and a third of the respondents tried the video game that continues the storyline, as well as other related movies, and series. The least popular was the extension in comic book form.

CHAPTER 4. INTERACTIVE DIGITAL NARRATIVES

Interactive digital narratives (hereinafter referred to as IDNs) are guided television films and video games that also allow viewers to make interactive choices. If the category of interactive digital storytelling were to be interpreted broadly, it would include any narrative presented on a digital interface that enables audience interaction. Such an approach would lead to a discussion of the micro-narratives of social media and content-sharing portals, as well as the individual or collaborative creative processes of users on different digital platforms, which would be impossible. Researchers in the field face definitional and terminological challenges in this regard, as the theoretical background and research methods of media and film theory, narratology, and cognitive psychology can be used to approach studies on the creation and impact of interactive narratives.

In this chapter, IDNs are discussed that support user manipulation such as interactive television shows and interactive narrative video games. In these narratives, the audience actively shapes the sequence of episodes and navigates between them in a non-linear way. Murray (2018) identifies agency as the most important feature of IDNs that influences their dramaturgy. The agent of the 21st century is a recipient and an actor at the same time, who is a voyeur, user, participant, and manipulator – also called an *interactor*. The agency of the interactor is the pleasure of using an interface (which can be a computer or a television) that responds dynamically to his or her participatory and action-shaping behavior.

IDNs tell stories through optional pathways, with countless plot variations from the beginning to the end of the story, based on the choices made by the interactor. A possible definition of this phenomenon is:

Interactive Digital Narrative is an expressive form in the digital medium, implemented as a computational system containing a protostory of potential narratives that is experienced through a process in which participants influence the continuation of the unfolding experience that results in products representing instantiated stories. (Koenitz, Di Pastena, Jansen, Lint & Moss, 2018, p. 108)

According to the authors, this definition implies that (1) the author/scriptwriter of an interactive digital narrative must create a dynamically malleable system at the design stage; (2) the audience has an impact on the course of the narrative by interacting with this system and (3) IDNs require the presence of additional elements that allow for an alternative, branching structure of storytelling. In the case of complex and dynamically changing narrative structures such as those of adventure game books, the linear or non-linear nature of the narrative is not necessarily the cardinal issue. Murray (2018) has called these products *multi-sequential*, referring to their modular structure.

Research on IDNs began at the turn of the millennium. A symposium on the potential of artificial intelligence for narrative structure creation was held in 1999, followed by an annual International Conference on Interactive Digital Storytelling (ICIDS) (Young, 2018). The international association ARDIN (Association in Research in Digital Interactive Narratives), which has been active since 2018, aims to support research into all forms of IDNs, including interactive documentary or feature films, video games, augmented or virtual reality narratives, or transmedia storytelling that supports interactivity.

The narrative and technological conventions of IDNs have taken decades to emerge. Even before the Internet, there were examples of computer-generated narratives that responded to user interactions. Murray (2018) considers the first interactive computer-assisted narrative to be Joseph Weizenbaum's program *Elisa*, the Automated Psychotherapist from 1966 and an early predecessor to today's chatbots. In the 1970s, by combining the role-playing game *Dungeon and Dragons* with artificial intelligence (AI), MIT researchers created the first interactive fiction computer game, *Zork*, three versions of which became available on personal computers in the 1980s. In the 2000s, the first game in the *Divinity* series, *Devine Divinity*, was released.

In terms of the branching structure of IDNs, Murray sees hypertextuality, developed for educational purposes before the *world wide web*, as an important precursor. *Storyspace* software, which was developed in 1987, was able to facilitate hypertextual branching, associative thinking, and storytelling. But the turning point for IDNs came at the turn of the millennium, when hypertextual representation of texts on the Internet became a matter of course and a new generation of computer games was launched. In addition to simulation and win/lose individual games, *The Sims* appeared in which the player could create virtual human communities whose members interacted with each other in various ways. In addition, the player could endow the characters with external and internal characteristics and generate different situations and living conditions for them. The novelty of the game was that the player could actively shape the gameplay rather than simply following the paths intended by the game makers. Another major breakthrough in interactive storytelling was the game *Façade*, in which the player could engage in dialogue with the characters in the game who invited the player into their home and into the game's storyworld; the dialogue taking place in the game's guest room could be shaped by the player. Since the responses generated by the AI could shape the dialogue in a myriad of ways, the player was also able to influence the fictional narrative (i.e., the story of the couple's relationship). It was in these games that players first experienced agency, functioning as active controllers of the game (Murray, 2018).

Today, in the world of media convergence, the person on the other side of the screen is interactive and is thus no longer called the user or the receiver, but the interactor, as it is he or she who receives, experiences, and shapes the story by making choices and carrying out procedural interventions. Narrative

video games constitute the largest group of digital interactive narratives, but fictional and non-fictional narratives of interactive television are also on the rise.

All storytelling can be labeled as interactive digital storytelling, regardless of the medium, in which the design team's exploration of a narrative product (e.g., a game or TV show) is guided by the interactions of the recipient. Such narratives may feature non-linear plot-driving as well as multiple scaffolding variations that encourage the interactor to engage with the content iteratively. Another feature of IDNs is that, unlike traditional storytelling where the time of the story and the time of reception are split, in interactive storytelling, they coincide, especially when the interactor is involved as a first-person agent. The interactor controls the course of events through his or her choices, and while there is freedom of choice, not all interactive narratives give interactors the time that they need to process decision situations thoroughly.

Narrative structures in video games can be different. *Emergent narratives* are games that only provide the narrative framework and the story with its episodes is developed by the player during gameplay (e.g., *The Sims*). Eladhari (2018) distinguishes four layers of storytelling in emergent narrative games. The basic level is the coded, AI-driven digital framework, the second level is the backstory framework, the third is the level of discourse between the player and the game, and the fourth level is represented by the player's 'reconstruction of the story, which is embodied in its retelling. A game can be said to be well-designed if the interactor can recall the most important moments of the game's story (Sych, 2020).

From a narratological perspective, further issues arise when the interactive digital narrative is augmented with 360° videos. Instead of the sequential spatial structure of traditional moving images, the interactor finds himself in the continuous present-time of virtual reality and in a multidirectional space without control (Fearghail, Ozcinar, Knorr & Smolic, 2018). In these narrative universes, the units of the narrative are located on a spaceline instead of a timeline. Stepping out of the cutscenes and sequences of traditional film narrative, the viewer decides which scene to watch and from which angle to view events. The free change of viewpoint through VR or AR may therefore cause the viewer to miss moments that are important to the story (Rothe & Hussmann, 2019). A further challenge for the interactor is that the pacing of a film presented in VR becomes imperceptible to the audience and orientation problems can take the viewer out of the film experience (Dowling, Fearghail, Smolic & Knorr, 2018). It is also questionable whether such an experience can be considered as true interactivity if the player/participant is free to look where he or she wants to. In recent games, creators have made some story elements inaccessible so that the players have access to significant episodes in a sequenced structure.

The IT environment for narrative games is constantly evolving, and access to it may have significant financial implications. However, IDNs have also

emerged in video streaming services, which raises the question as to whether these services are in competition with video storytelling games. Kolhoff and Nack (2019) investigated interactor engagement and perceived agency for a single interactive episode of the *Netflix* series *Black Mirror*, *Bandersnatch*. They found that viewers (n = 169) were initially curious and engaged with the program, but due to the limited number of choices which at times produced illogical consequences, they felt little agency or control over the narrative.

Thanks to ongoing technological innovations, interactive storytelling is no longer just a feature of computer games and television narratives, but also of cultural and educational institutions. The involvement of technology and the interactivity of the recipient can take many forms. A good example of storytelling in real space using digital tools and interactivity is a theater performance in which the narrative was manipulated by the audience using a Data Generator Engine that they had limited control over, and the actors improvised and turned the data into a story (Green, Holmquist & Gibson, 2020).

The inclusion of interactive storytelling also allows for a multi-faceted exploration and playful interaction with museum artifacts representing cultural heritage. The tools of a period become artifacts whose functions are not clear to the visitors. However, an exciting museum edutainment experience can be created if the visitors become participants in a shared narrative and engage in problem-solving. The experience is enhanced when role-playing in real space and time is complemented by the museum educators' use of external technologies such as VR or mobile AR (Alinam, Ciotoli, Koceva & Torre, 2020).

Interactions are not limited to taking place through digital interfaces, even in video games. Echeverri and Wei's (2020) hybrid interactive story, *Letters to José*, is based on the correspondence of two Colombian brothers, presented in the form of fragmented life events between 1948 and 1957. The designers assigned artifacts and objects to the decision points in the narrative, which were presented in digital and physical form. Some of the objects were diegetic devices belonging to the storyworld while others transdiegetically connected the real world of the interactor and the storyworld; in addition, there were also extradiegetic objects existing outside the storyworlds. Physical objects with microcontrollers allowed the interactor to reveal hidden family histories.

Authoring tools are software that can be used to create IDNs. These applications are not designed for programmers, but for ordinary users who want to present their narratives in a hypertextual and modular form. Similarly to *Storyspace*, the *Twine* platform supports a branching structure for interactive storytelling.²⁵ Using the cooperative puzzle method, interactive storyboards were created in small groups by secondary school students: each of the four students in the group developed a plot module in the branched storyboard,

²⁵ <https://twinery.org/>

and the group engaged in the joint construction of the branched narrative using the software (Mott, Taylor, Lee, Rowe, Saleh, Glazewski, Hmelo-Silver & Lester, 2019). In another experiment, students aged 9-11 programmed interactive digital stories using *Scratch*.²⁶ In addition to animating the character movements, the students successfully incorporated a narration text panel and an 'ask the audience' panel (Smith, Mott, Taylor, Hubbard-Cheuoua, Minogue, Oliver & Ringstaff, 2020). For younger age groups (i.e., preschoolers and toddlers) *Mobeybou* provides an interactive digital storytelling framework in which children can place story cubes in a causal order on an electronic table and simultaneously follow the plot on screen and manipulate the narrative by rearranging the cubes.²⁷ The software includes a prototype story, but the narrative elements, episodes and paths are created by the children. Each set of cubes has two protagonists, an antagonist, an animal, a landscape, an instrument, and an object with magic powers. The students can also choose from five types of weather, different atmospheres and background sounds (Sylla & Gil, 2020).

Despite experiments with hybrid environments, most research on IDNs focuses on the design mechanisms of screen-based, algorithm-driven narrative structures. Knowledge of the user experience is essential for the design of IDNs; therefore, research often focuses on the impact on the interactor – especially on their motivation, engagement, satisfaction, and enjoyment.

In a systematic literature review, Revi, Millard, and Liverton (2020) summarized the results of 20 empirical studies on users' interactive digital story engagement. All of the studies found that the sense of *agency* is enhanced when the interactor feels capable of doing what he or she wants, can make autonomous decisions, and sees that his or her decisions and actions influence the development of the plot. The experience of agency is further enhanced when the interactor experiences that his or her decisions are unique and thus the plot is personalized. Important factors were also identified in connection to *cognition*, such as whether the interactor perceives the course of events as logical and whether he or she sees the behavior of the actors as consistent, as well as the extent to which abstraction or ambiguity affect the interactor's ability to follow the plot. Research has concluded that a well-constructed interactive narrative can be reconstructed by the player. Perceived realism is also an important consideration, because the interactor needs to feel that the storyworld is authentic. The sense of *immersion* can be related to the experience of being in the game, where the interactor feels that he or she has become part of the storyworld. The sense of immersion is also influenced by the degree of the user's concentration and identification. The experience of immersion requires the interactor to experience continuity, and the experience of immersion is also influenced by whether the interactor

²⁶ <http://projects.intellimedia.ncsu.edu/infusecs/>

²⁷ <https://mobeybou.com/>

finds the environment aesthetically pleasing. The *dramaturgy* and narrative branching system of the game are also particularly important, and the themes need to be variable, novel and relevant. A well-constructed dramaturgy keeps the interactor's curiosity alive, and the way the game ends and the suspense elements it contains contribute significantly to this. Interactor engagement is also highly influenced by *rewards*, which are appropriate if the interactor feels that the efforts expended have been worthwhile and that his or her skills and abilities have improved during the game. Research also shows that interactors are most motivated by rewards related to completion, achievement, or progress.

The study of IDNs is still an emerging field. Koenitz and Palosaari Elohari (2019) identify five problem areas for research on IDNs, including a lack of agreed-upon methods of analysis, a Babylonian confusion of terminology, and a type of amnesia, or lack of recollection of past experiences. Although the British Library has already begun archiving web interfaces²⁸, the archiving of IDNs is still a work in progress. Koenitz and Palosaari Elohari see the rapidly changing technological environment, as the most problematic aspect of IDN research. Learning to use newer and newer tools and platforms makes the creation and reception of interactive stories difficult. The technological architecture of each device is different, often leading to incompatibilities and a narrow range of users who are actually able to use newer technologies. To improve the field, formats need to be adapted which are more practical and easy to distribute.

CHAPTER 5. DATA-DRIVEN STORYTELLING

Data visualization as a research and development field appeared at the turn of the millennium with the rise of digitalization, the Internet, and mobile technology. The logged data of users' online activities has provided useful information for the design of innovations in technology, business, or medicine, as well as the preparation of cultural-political actions. The era of Big Data has brought access to large data sets generated from online activities. Data management is carried out using artificial intelligence algorithms and the work of data scientists. Huge data sets, even from multiple sources, also enable the exploration of complex relationships, which require a change in perspective for data visualization.

Software companies have adapted to the content consumption habits of their target audiences, and also to the media environment of our time. Research results, previously presented linearly with slide shows (e.g., *Microsoft Power Point* presentations), have been complemented by new applications that allow for non-linear reception. One group includes applications that

²⁸ <https://www.webarchive.org.uk/en/ukwa/collection>

simulate free spatial movement and display networked connections (e.g., Prezi), while the other group includes dashboards and infographics that condense complex data contexts into a single static interface (e.g., *Tableau*, *Canva*). These visualizations allow the user to navigate through the data displays along any path according to his or her own logic. At the same time, companies have also adapted to the interactive user behavior of target groups, and since the second half of the 2010s, static presentations of data analyses have been increasingly replaced by presentations that allow for dynamic viewing.

A new trend in effective data communication in business and journalism is *Data Storytelling* or *Data-Driven Storytelling* (DDS). In the past, story-based communication in business was mainly linked to marketing activities as part of brand building. In the first decades of the 21st century, however, a trend has emerged, driven by the opportunities of technological development, to use visualization and narrative frameworks to interpret data and communicate data analysis.

Bruner (1986) distinguished between argumentative-logical and narrative forms of cognition, but the DDS approach combines the paradigmatic argumentation and narrative modes of thought that also present motivations and motives. At the same time, the narrative structuring of data challenges Manovich's (2001) theory of the separation of datasets and narrative. In DDS, the use of a narrative framework allows for the presentation of problem justification as well as the relationships between data through varied data visualizations. Together, visualization and narrative create context and provide clear information, such as in the case of a multispectral analysis of a large corpus of data which can be presented in one interface.

Sejal (2019) emphasizes the effectiveness of narrative data presentation by highlighting its ability to take data sets that are considered dry and boring and present them in a way through which the audience learns about the antecedents and consequences of the findings through storytelling. In explaining complex interrelationships, the narrative framework makes it easier to evoke the logical connections drawn by the data. At the same time, data analysis aims to persuade the recipient and to encourage action, which is more effective when embedded in a story as it facilitates emotional identification. The linear narrative structure illuminates the research question, highlights patterns in the data and helps to develop the final conclusions.

The secret to the effective communication of data and its analysis is a clear visual interface and a narrative structure. Tables, graphs, diagrams, functions, clusters, maps, and timelines are used to illustrate the relationships between data series, variables, and comparisons between data sets. These graphical tools are also used in DDS in both static and dynamic versions that allow for interactivity.

The products of DDS are specific, compressed narratives of data visualization. Stolper, Lee, Riche, and Stasko (2018) analyzed visual forms

of communication (n = 45) on different interfaces (e.g., blogs, news portals, and platforms specifically dedicated to DDS, such as *Tableau* or *Infogram*) to explore different types of DDS. The common feature of the interfaces was that their creators determined the order of visual elements by narrative elements. The research team found that the narratives contained both textual and iconic representations. The means of expressing the narrative and explaining the context included flowcharts with labels, text displayed in visualizations and the highlighting of text or visual elements. The elements of the narratives were linked to each other by interactions, similar colors, or animations. Navigation of the visualizations was assisted by previous/next buttons, section buttons, table of contents or maps. The exploration by the recipients was facilitated by the creators through innovative tools such as dynamic, embedded, and stand-alone visualizations.

Static data-driven narrative presentations do not allow for audience interaction, they do provide a complex way of displaying multiple data contexts on a virtual canvas (*Figure 4*).

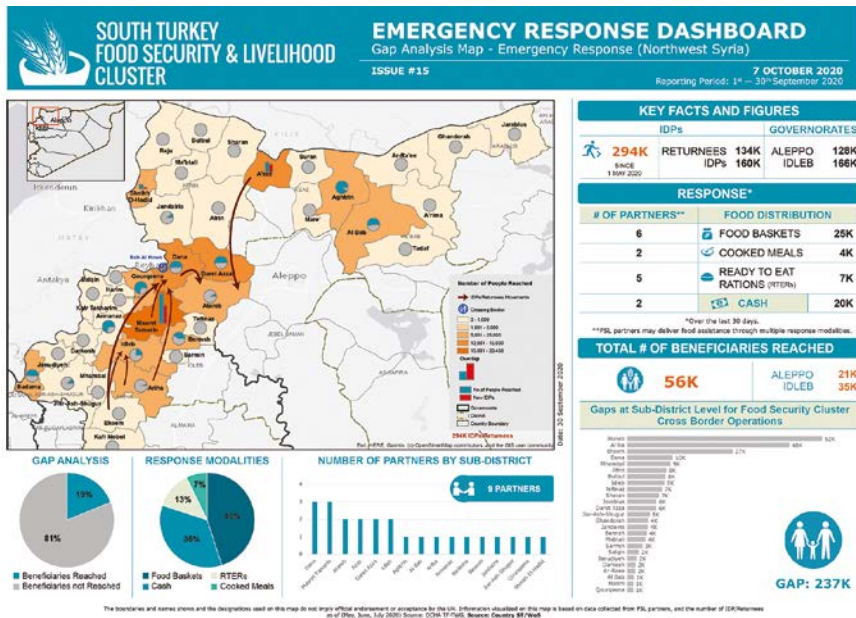


Figure 4. Humanitarian actions in Syria [dashboard] (<https://www.humanitarianresponse.info/en/operations/whole-of-syria/infographic/funding-update-2021-syria-humanitarian-response-plan-hrp-23>)

Figure 4 shows a visualization which provides a complex representation of humanitarian activities. In the top left, the most important quarter of the dashboard, there is a map showing the area and a color-coded representation of the number of people reached. Pie charts and bar charts below the map concretize the extent of the outreach, the ways in which assistance is being

provided and the territorial representations of partner organizations. The right-hand column provides further details. Such data narratives usually summarize the reports of organizations and companies on what they have achieved over a period of time and the resources they have mobilized to achieve their aims. The United Nations Office for Coordination of Humanitarian Affairs communicates the results of humanitarian action in the form of dashboards²⁹. As there is a lot of information and context in one interface, they avoid tautology (i.e., mentioning the same thing twice but in different forms) at the visual and linguistic level and aim for a clear, concise visual and linguistic presentation.

The most common types of dashboard-type DDS are reports, peer reviews, and internal organizational analysis through which companies evaluate their revenues and expenses, the functioning of their departments, and marketing visualizations. When developing a narrative framework, organizations take into account the prior knowledge and value preferences of the target group (Sejal, 2019).

The visualization of DDS can be compared to the visualization of a comic book, as it consists of sequences. The number of internal fields on a page is four or nine, but often there is only one visual element on the virtual canvas. Text information is arranged in text bubbles or columns, as in a comic strip. In contrast to the continuity of film narrative, comic books are sequential. The information in the fields appears in separate units, which are logically, spatially, or temporally separated. Each segment visualizes the most significant connections. Similarly, the DDS analyses visualize the most relevant data contexts. Maps and diagrams represent spatial-structural data (such as epidemiological data, crime statistics, or housing prices) while flow charts are adequate visual representations for illustrating temporal-causal data (such as population trends or changes in averages) (Tversky, 2018).

The visual elements on a dashboard or infographic are complemented by verbal elements similarly to the forms of communication used in comic books. Storytelling is achieved through texts and visual forms of communication. Visualizations that directly or indirectly represent the author's explanations and interpretations often make use of selection and visual highlighting to focus the reader's attention on the relevant aspects. These types of visualizations present the interpretation in a header or footer, highlighting the gist and indicating sequencing (Thudt et al, 2018).

Graphical representations of data – whether in the form of a chart, cluster, map or timeline – are based on the basic concepts of *proximity*, *centrality*, and *direction*. Proximity allows for visual grouping, centrality for highlighting, and upward or downward directions show positive or negative trends. By varying the size and using bright colors, the importance of certain elements can be highlighted. Lines are conventional tools to express a relationships

²⁹ <https://www.humanitarianresponse.info/en/infographics>

between elements, and arrows can be used to show causality or hierarchies of concepts and data (Tversky, 2018).

In visual storytelling, episodes can be replaced by symbols. An example is the partnership symbol in *Figure 4* (two people facing each other shaking hands), which indicates to the receiver that there was a prior agreement between the partners before they started working together. For narratives which compare data, another effective visual tool is the juxtaposition of data series and the use of visual attributes (e.g., replacing countries with flags or replacing gender with biological sex symbols). *Eurostat's* infographic provides two types of comparison in one interface by showing the difference in life expectancy between men and women in the European Union and by giving examples of the two ends of the scale (*Figure 5*).

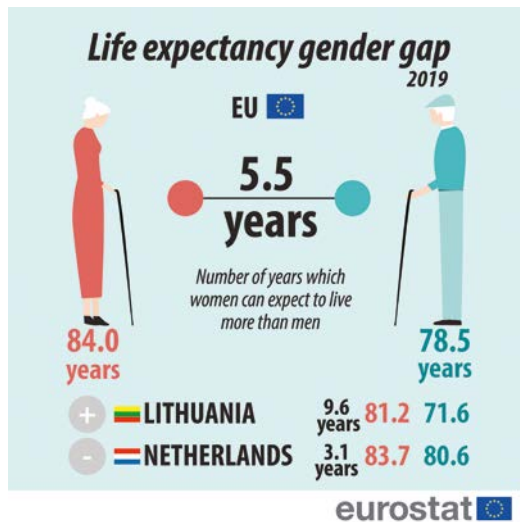


Figure 5. Life expectancy gender gap in EU (Eurostat. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Life_expectancy_gender_gap_2021-01.jpg&oldid=517321)

The infographic contains few but relevant details: pink dresses symbolize women, while men are represented by a blue outfit; flags represent countries, and grey hair and canes are included as attributes of old age. After learning the facts, the recipient has a number of questions, including the geopolitical, historical, and lifestyle factors that cause the differences between the two countries at the ends of the spectrum. The viewer may be concerned by the infographic, leading to a reflection on his or her own situation.

Thudt, Walny, Gschwandtner, Sykes, and Stasko (2018) argue that the advantage of DDS is that it allows recipients to experience the joy of discovery and find their own story with which to compare to the researcher's interpretation. Interactive visualizations in particular activate the interpretation of the recipient, who chooses the perspective or point of view from which

to interpret the data set. For visualizations of large datasets, dynamic and responsive visualizations that also allow for reader interactivity are especially effective tools.³⁰

Another means through which audience interaction can be easily achieved is the presentation of static data-driven stories real-time. Involving the audience in the data presentation stimulates curiosity and provides the experience of drawing conclusions through collective effort. The means of engagement can be a poll with a suitable interactive presentation interface or an interactive map on the topic which the audience can use to view relevant data.

The emotional impact of DDS can be enhanced by dynamic visualizations. In the case of the dynamic interactive visualization of deaths caused by the legal use of firearms in the US, countless tragic life narratives are included. The frightening contrast between life expectancy calculated based on demographic data and deaths from gun violence is also presented in this powerful visualization. Narrative flow can be reinforced by a gradual development of the theme, aided by maps and dynamic infographics, and a dramatic effect be achieved with the use of dynamic tools (e.g., when presenting a dramatic increase in case numbers) (Bach et al., 2018).³¹

Dynamic visualizations present trends in progress, for which audiovisual representations are the appropriate means of expression. Regarding the subject of life expectancy and population, Hans Rosling created a dynamic graph with color codes and scales to show population trends and living standards on different continents over the last 200 years, influenced by social, economic, and cultural factors.³² A similar visualization was produced at the turn of the millennium showing the locations and frequency of nuclear explosions around the world in the second half of the 20th century.³³ The explosions are represented by numbers, country flags and flashes on a map, and the data-driven story is unique in that the explosions are accompanied by sounds of different frequencies for different countries, making the video not only a visual but also an auditory experience akin to a thrilling symphony. Danish public media chose a different kind of dynamic visualization to illustrate the 2015 refugee crisis, presenting the trends of the global social crisis through scrollable storytelling accompanied by explanatory texts and interactive maps.³⁴ This form of presentation allows the reader to choose the details that interest them the most. The visualization places the phenomenon in a global context while also showing migration trends by city. By presenting the real context, the presentation demystifies the political panic around the refugee crisis.

Responsive, interactive visualizations represent a new trend in dynamic DDS. A common feature of these visualizations is that they provide the

³⁰ <https://coronavirus.jhu.edu/map.html>

³¹ <https://guns.periscopic.com/?year=2020>

³² <https://www.youtube.com/watch?v=kUCVVALuCnw>

³³ <https://www.youtube.com/watch?v=I9lquok4Pdk>

³⁴ <https://www.dr.dk/nyheder/indland/interaktiv-grafik-her-er-flygtningekrisen>

recipient with the capability to specify the variables which are shown on the graph. One such responsive visual is the US gun homicide interface (see above), where the recipient can make a comparative analysis using variables such as gender, age, ethnicity, region, type of weapon, and the relationship between murderers and victims. Similar interactive interfaces have also appeared during the COVID-19 pandemic. The WHO's coronavirus information interface features a classic sequential dashboard layout, but the visualization of relevant trends is responsive: users can access additional information by selecting charts and maps, and can activate filters by moving their mouse.³⁵ Similar interactive visualizations are available from the Danish public media, with data updated daily.³⁶ A further example of interactive DDS is NASA's visualization of a time machine showing the parameters of the Earth³⁷ which allows the viewer to create a narrative that is relevant to their own.³⁸

Explanatory visualizations, which do not support interactivity, pre-interpret data from a particular perspective, focusing on certain aspects of the data to create a relationship and narrative sequence between them. Visualizations that include exploratory aspects, on the other hand, give recipients flexibility by allowing them to choose the perspective and the order in which to view the data. This flexibility can help readers find their own meaning in the visualization (Thudt et al., 2018).

Presenting data using a narrative framework is a complex undertaking. Chevalier et al. (2018) reconstructed the process of DDS based on semi-structured interviews with nine professionals, including researchers, graphic designers, and journalists. They found that DDS is a serious collaborative task that requires a range of skills, such as application knowledge and collaborative skills. As in all research, the work starts with data collection, cleaning, and interpretation. The creative team needs to find relevant results and connections in the data set in order to develop the right approach through which to explore the relationships in the data. The right visualization also requires the research team to experiment with different visualization types and place them in context. The data team and the storytelling team need to work in close collaboration to achieve an impactful final result (*Figure 6*).

³⁵ <https://covid19.who.int/>

³⁶ <https://www.dr.dk/nyheder/indland/status-paa-coronavirus-lige-nu>

³⁷ <https://climate.nasa.gov/interactives/climate-time-machine>

³⁸ <https://climate.nasa.gov/earth-now/#/>

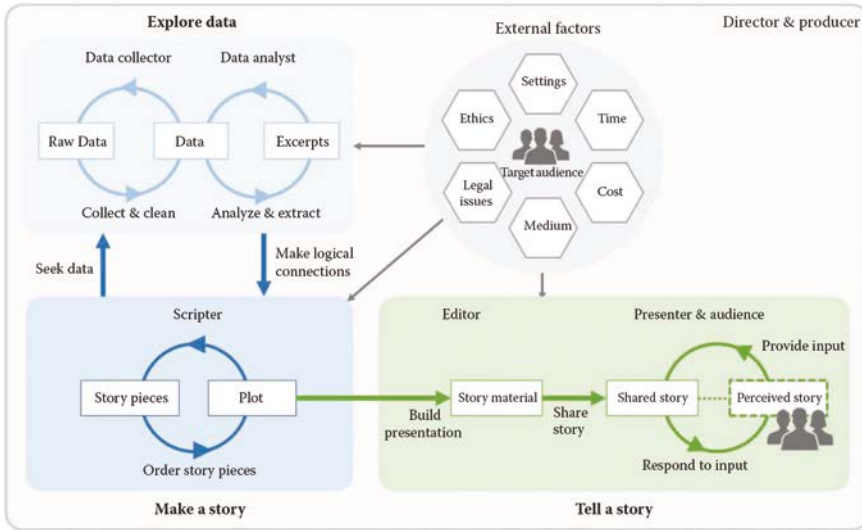


Figure 6. The storytelling process from the story idea to visually shared stories. (Chevalier et al, 2018, p. 157)

The cardinal question of presentation is how to highlight essential components, which involves knowing where to place them and what color and form to use to emphasize them. In addition to the people responsible for data retrieval, analysis, editing, verbal and visual presentation, the process also requires computer programmers who are skilled in digitalization. From the first step of the process to the last, the needs of the target group and the ethical and legal communication of data must be kept in mind.

The complexity of the DDS-process requires quality control. It is important to check whether the software environment for creating the data-driven story is suitable for visualization and whether the visual narrative produced and presented communicates the context in a comprehensible way. The effectiveness of the data-driven narrative can be measured by questioning, recall testing and physical tests (e.g., eye movement tracking, pupil dilation, or measurements of breathing) as well as by quantitative analysis of logged page data (e.g., number of visits, likes, follows, and shares) and qualitative analysis of comments (Amini, Brehmer, Bolduan, Elmer & Wiederkehr, 2018).

Key principles from research and journalism should also be taken into account. One of these principles is that visualization should aim to present a phenomenon in a multidimensional way. Another is that the context of the data should be presented in a way that is easy to follow. In addition, it is also advised to avoid presenting misleading data in the process of data cleansing and when highlighting certain visuals, and to preserve the anonymity of the data providers in the case of sensitive content (Diakopoulos, 2018).

Interactive and responsive DDS has also recently been referred to as *Digital Scrollytelling*. The term is a combination of the terms *Digital Storytelling*

(discussed in the next chapter) and scrolling, and it considers the way that content is consumed (i.e., the actions of the user who moves the mouse or their finger to uncover new parts of the visual interface). The user does not move between story elements by means of menu items and visualized buttons, but by moving up and down the screen using their finger or cursor.³⁹ Such a media environment can be seen as a concise, mixed-media representation in which images, text, music, and multimedia elements can coexist (Säwert & Riemp, 2019). Scrollytelling visualization provides the recipient with an experience of space and time. Like webtoons, scrollytelling narratives can be received at the reader's own pace, as scrolling allows the reader to control the speed or content consumption and to return to a particular detail.

CHAPTER 6. DIGITAL STORYTELLING

A digital story is a narrative created with the help of digital tools, but to describe it simply in terms of these two components is an oversimplification of the world of the moving image. Handler Miller (2004/2020) uses the term digital storytelling primarily to refer to nonlinear narrative types, as well as all fictional and non-fictional forms of narrative that are created through user interactivity on digital platforms. In her interpretation, digital storytelling encompasses a wide spectrum of open-ended narrative types, from interactive films to transmedia genres to virtual games. However, the term digital storytelling (hereinafter referred to as DST) actually refers to a process model of interpersonal interactions and individual creative activities that involves the use of digital tools and results in a video consisting of still images and a few minutes of narrative text spoken in the narrator's own voice (Lambert, 2002/2013; Ohler, 2013).

The basic concept and the methodology of DST were developed by Joe Lambert and his colleagues at the Center for Digital Storytelling (now *StoryCenter*⁴⁰) in California in the early 1990s as a means of exploring the possibilities of community art. The group's three-day workshops use digital technology to present and discuss life events in the form of a few-minute video narrative. The original description of the process is made up of three steps: finding the story, creation, and sharing. The first stage 'involves the Story Circle, which aims to help participants find their story and build a circle of trust through icebreaking, team-building and storytelling games. This is followed by text creation, the main criteria of which are conciseness, causality, and the tripartite structuring of the narrative. The group members read their story outlines to each other, which provides an opportunity for the participants to discuss whether a coherent, comprehensible and meaningful

³⁹ <https://thewaterweat.com/>

⁴⁰ <https://www.storycenter.org/>

text has been created. After considering the suggestions and finalizing the text, the story is produced in digital form. In this phase, participants digitize their images, read and record their narration, and edit the chosen images and audio into video using editing software. All these activities are carried out in consultation with the group leader and members. In the final stage, the participants share the digital stories offline and/or online, discuss their experiences and evaluate each other's videos (Lambert, 2002/2013).

The above process is characterized by social, cooperative, and discursive activities as well as individual and productive activities. Text writing and the editing of images and video are facilitated by evaluative and critical peer interactions which can be seen as a form of authorial collaboration. The exchange of opinions and the reflections on each other's texts and images all serve the purpose of making the digital story both relevant for the author as well as interesting and authentic for the audience. The final product is the digital story, which *StoryCenter* defines as a unique artifact 2-3 minutes in length and illustrated with still images, accompanied by music, depicting a temporal context, and featuring the writer's own point of view (Lambert, 2002/2013). Ohler (2013) argues that in its expression DST is less focused on the word digital and more on the word storytelling, as digital applications and online interfaces are in the service of self-expression and/or content management.

The revolutionary innovation of DST is that it enables anyone to produce audiovisual content, previously was the privilege of professional filmmakers, so that anyone can articulate first-hand life stories (Lambert, 2002/2013; Lanszki, 2015a, 2017; Lanszki & Papp-Danka, 2017; Lanszki & Horváth, 2017). *StoryCenter* has collaborated with thousands of public and non-governmental organizations to organize workshops and introduce the process to thousands of people worldwide. Since 1998, DST has appeared among the courses of more than 100 higher education institutions in the US in the fields of teacher education, journalism, communication theory and practice, IT and creative writing. At the turn of the millennium the method has also spread to media institutions on other continents: the BBC's regional Welsh channel, led by Daniel Meadows, has launched *Capturing Wales*, and the *Australian Centre for the Moving Image* in Melbourne has also discovered the power of digital stories. DST has grown into a genre of mass media, but with the web 2.0 turn, video-sharing portals have made it possible to publish digital stories individually, independently of larger media institutions (Lanszki, 2016a).

By enabling users with no particular technological background to express themselves through multimedia, DST has grown into a movement, thus enabling people from different socio-economic and cultural backgrounds and native languages to express themselves online. Numerous conferences⁴¹

⁴¹ These include the annual international traveling conference *The Digital Storytelling Conference* or the annual *Digital Storytelling Conference* in Cardiff since 2003, organized by the BBC, while the *Un/*

around the world have been built around DST, and research centers and academic research groups⁴² on DST are proliferating. In addition, a good deal of individual research has focused on the role of DST in self-expression and psychotherapy for marginalized social groups.

DST has also appeared in the world of education, where it has become a tool not only for self-expression but also for content management and skill development. In his guide for teachers, Frazel (2010) simplified the description of the process into three stages allowing for DST to be interpreted in different pedagogical contexts: (1) preparation; (2) creation; and (3) presentation. Yang and Wu (2012), on the other hand, break the process down into four phases: (1) pre-production (asking questions, finding information on the topic, writing, oral presentations, and storyboarding); (2) production (compiling images and audio recordings); (3) post-production (editing); and (4) sharing. This is somewhat similar to Ohler's (2013) approach, which considers the first stage as the planning stage, with the actual work divided into three parts (pre-production, production, and post-production), with post-production involving the insertion of effects and title. Ohler's last stage is also labeled as sharing.

All the approaches mentioned above draw on the StoryCenter model, according to which a digital story is a multimedia, typically linear narrative created using ICT tools in which the visual elements are still images and the auditory element is the narrator's own voice. The stories are characterized by their cinematic nature, uniqueness, emotional reflection and focused content, and their creation is a special hybrid blend of individual and collective efforts which dynamically combine both offline and online activities.

StoryCenter defines seven key elements of a digital story (*Table 1*).

Table 1. 7 key elements of a digital story
(cf. Robin, 2008, based on Lambert, 2002)

1. Point of View	What is the main point of the story and what is the perspective of the author?
2. A Dramatic Question	A key question that keeps the viewer's attention and will be answered by the end of the story.
3. Emotional Content	Serious issues that come alive in a personal and powerful way and connect the audience to the story.

told-Un/conference Digital Storytelling event was held at the University of East London in 2017 which focused on the role of DST in different fields (e.g. education, health, civil society, etc.).

⁴² (1) USA: *University of Houston*, research team in educational science led by *Bernard Robin*, who is researching the use of DST in education and leading a MOOC on *Coursera*; *University of Minnesota*, library science; *University of Massachusetts*, sociology, led by *Jaber F. Gubrium* (2) Norway: *University of Oslo*, led by *Knut Lundby* in Education and Media Studies (3) Canada: *Centre for Oral History and Digital Storytelling* (4) Australia: *Queensland University of Technology*, Social Sciences (5) European Commission funded program in several EU Member States: *IDigStories*.

4. The Gift of Your Voice	A means of personalizing the story to help the audience understand the context.
5. The Power of the Soundtrack	Music or other sounds that support and enhance the story.
6. Economy	Using just enough content to tell the story without overloading the viewer.
7. Pacing	The rhythm of the story and how slowly or quickly it progresses.

The most important characteristic of digital stories is that they all reveal a narrative pattern, the key dramaturgical elements of which are visualized by Ohler (2013) using the *Story Map* (Figure 7).

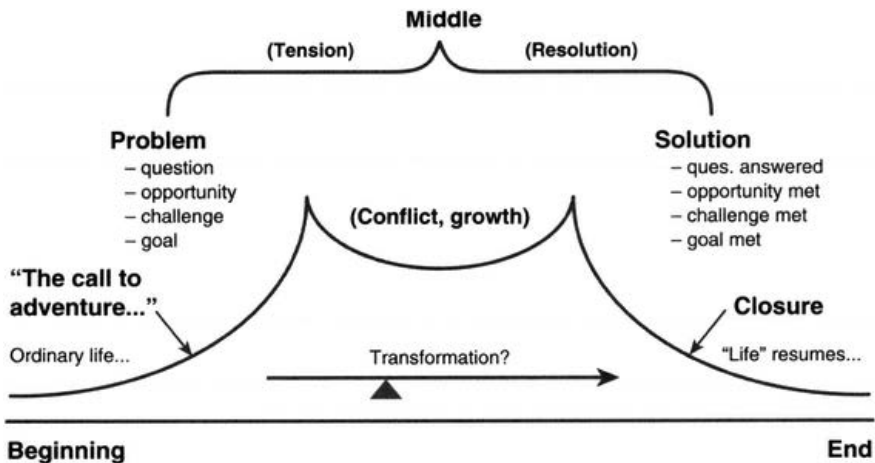


Figure 7. Story map. Visual representation of a narrative (Ohler, 2001/2013)

The elements of the narrative outlined above are in a causal-logical order. In the exposition, the initial situation is presented which is changed by an obstacle, a conflict, an opportunity, or a problem. The challenge escalates and culminates in the middle of the narrative. In a digital story, the main character attempts to resolve the situation, even from multiple perspectives and the development of the characters can be observed as the problem is solved and the digital story concludes.

Digital stories can be differentiated based on the subject matter of the narratives and the author's relationship with the narrative. Lambert (2002/2013) grouped the digital stories produced in StoryCenter workshops by theme, classifying them into the following categories: (1) Personal Stories (Digital stories about important individuals which – reveal the creator's relationships; these include Memorial Stories, Recovery Stories, Coming-of-

age Stories, Discovery Stories, and Dream Stories); (2) Representations of life events (Adventure Stories and; Accomplishment Stories); (3) Local Stories; and (4) Professional Stories (Lanszki, 2016a).

In a digital story, the personal relationship of the author with his narrative is well delineated; and Lambert (2002/2013) represents this relationship with concentric circles as seen below (*Figure 8*).

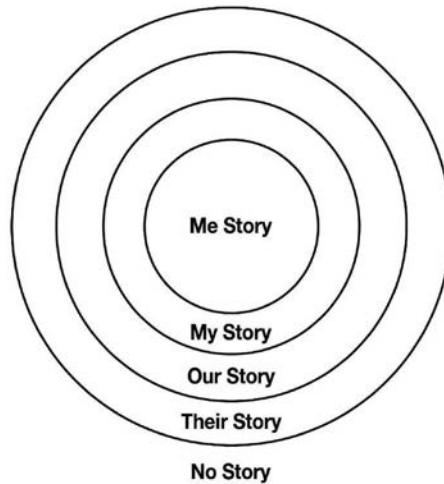


Figure 8. Approaches to Content in Digital Stories (Lambert, 2002/2013, p. 43)

The circles above show how close the narrator's relationship is to his or her own narrative. The subjective relationship between the narrator and the subject of the narrative is strongest at the center of the circle and becomes more objective as the circles move out. In the innermost circle is the *Me Story*, the narrator's identity story in which the author reveals the individual life story that most defines his or her personality. The next band is *My Story*, in which the narrator relays information about important objects, people, and circumstances in his or her environment. In the third circle, the narrator reflects on the collective cultural, historical and social experiences of a community in *Our Story* narratives, and on other communities in *Their Stories* narratives. Outside these circles are *No Stories*, in which there is no personal relationship between the subject of the narrative and the narrator (Lambert, 2002/2013). Examples of such stories are educational digital stories in which students create a digital story about a content subject. An interesting mix of these categories can be found in digital stories from students that are both informative and combine the narrator's personal experiences about the topic. A similar grouping of digital stories can also be found in Robin (2006), who distinguishes the thematic categories of (1) personal narratives; (2) historical documentaries; and (3) informative, instructive materials (Lanszki, 2017).

In autobiographical narratives, the author interprets and formulates his or her own family, social, or political relations (Lanszki & Horváth, 2017). In this sense the author engages in identity construction, relaying the events of the individual's life that are considered the most suitable for narration at the given moment (Bán & Nagy, 2016). In the educational context, subject content is thematized through digital stories adopting a narrative form of organization. After analyzing and synthesizing external sources and personal experiences, students construct their texts based on their own logic and present them in an audiovisual form in their digital story. Such cases of DST reflect an individual reworking of a topic.

Overall, the significance of DST is the impact of the process and the communicative and resource value of the artifact, the digital story. The process promotes acceptance and positive attitudes among members of heterogeneous groups, and in the case of homogeneous groups, it promotes mutual support and the formation of group identity.

A digital story is a compact form of human expression, and its digital and film-like format allows for easy sharing on Web 2.0 platforms. The video contains visual elements, but at its core is a text formulated by the creator which is a unique combination of verbal and written modality. Digital stories can be representative on several levels: they reflect the linguistic, autobiographical, and cognitive characteristics of the author, but also represent his or her narrower cultural environment; from a more global perspective, digital stories are narrative documents representing a particular time and social context.

Part III.

Digital Media and Storytelling in Research

According to Jerome Bruner (1986), the two modes of cognition, narrative and paradigmatic, are distinct. Ten years later, Bruner (1996) added to this basic thesis by claiming that the process of science in general is narrative since scientific speculation follows the same structure as storytelling. Research hypotheses arise in the researcher which are tested using certain instruments; after the results of the measurements have been evaluated the researcher refines previous assumptions, and with the conclusion, a new order is established. The narrative schema is thus seen as universal and can be interpreted at all levels of human thought and communication.

Storytelling is a highly adaptive means of knowledge and culture transfer. Expressing oneself in narrative form and understanding the narratives of others is key to successful communication. Narrative representations and the process of storytelling are used in research practices in many disciplines as they provide insights into deep layers of human thought and behavior while also revealing the transformative social, economic, and cultural effects of narrative.

In research methodology, narratives are primarily seen as sources which can be analyzed using qualitative and quantitative methods appropriate to the research objectives. Other areas of research study the impact of narratives using different measurement tools. The third group of research approaches, however, view storytelling as an arts-based participatory research method and considers both the research process as well as the narrative artifact as objects of analysis.

For the analysis of narrative structures and processes, phenomenological, constructivist, and hermeneutic research approaches are all relevant (Haigh, 2017). Especially in the case of autobiographical narratives, such as digital stories or oral history narratives, an interpretative *phenomenological* approach to analysis is particularly attractive, as it interprets individual experiences not in themselves but in the context perceived by the individual. The aim of this research approach is to gain as much insight as possible into individual experiences and, to this end, the data provider is considered the greatest expert on his or her own life events (Kassai, Pintér & Rác, 2017).

A *hermeneutic* approach can also be used to interpret life story narratives that emerge in the research process. The hermeneutic circle is based on the

premise that the whole can be understood by analyzing the details, and that individual parts are unintelligible without the broader context of the whole (Gadamer, 1960). The researcher can therefore only authentically explore the complexity of the whole and the part in the context of the phenomenon. The story and the narrative fragments that unfold during its creation, and ultimately the nuances and layers of the narrative, are as meaningful as the social and interpersonal relations that are revealed in the process. In hermeneutic research, both the details and the whole are important, as well as the truth of the multiplicity of interpretations.

The *constructivist* approach can be considered valid for researching teaching-learning and also as a research paradigm for storytelling-based studies, especially in the case of DST. Each step of the storytelling process brings the creator closer and closer to (re)constructing his or her story and the group closer to the formation of a group narrative, ultimately leading to the creation of individual and group identity. All this reveals hidden information and new layers of meaning to the researcher involved in the process, as narratives change depending on the modalities attached to them. An oral experience becomes a written text which becomes audio material, culminating in the completion of the story as an audiovisual artifact through the addition of images. As shown above, it can be seen that the phenomenological, hermeneutic, and constructivist approaches cannot be separated, as group members and researchers are all involved in the construction of the narrative.

This can be combined with an emerging approach in Anglo-Saxon education and research, the *transformative* approach, which is particularly relevant to DST. The transformative aspect of the approach can be observed at different levels. Hessler and Lambert (2017) argue that participants learn to look at and interpret the issues they discuss in the group in a different way by listening to others and critically reflecting on their own life events. However, the transformative nature of DST, through its dialogically collaborative and actively engaging methodology, has a personality-forming effect on participants, facilitators, and researchers. At the same time, digital stories can also trigger social transformation by being published and viral through social media, and by being used in university curricula or even in political decision-making.

In this section, digital narratives and their related research methodological principles are examined. In the first part, research approaches in the humanities and social sciences are presented that consider narrative as a primary data source. This is followed by a presentation of studies on the effects of narrative structures. Community participatory research methods that go beyond the digital narrative artifact to create narratives are also discussed. Finally, research is presented which focuses on the skill-building effects of video games with branching structures based on interactor decisions.

CHAPTER 1. AUTOBIOGRAPHICAL NARRATIVES AS RESOURCES IN SOCIAL SCIENCES

Autobiographical narratives in the social sciences, especially in history, sociology, cultural anthropology, and psychology, give researchers the opportunity to explore complex social contexts through analyzing individual perspectives through qualitative research methods.

In autobiographical narratives, time is divided into smaller or larger intervals, such as hours, days, weeks, seasons, years, decades, or generations. Each story has a protagonist, an antagonist, and episodes that present challenges to be solved and their solutions or failures. The narrative structure provides a familiar code system for all recipients, and researchers can develop a better understanding of socio-historical problems through the everyday events relayed through stories (Pisco Costa, 2021).

Narratives can be primary sources, such as texts from life story interviews, family photographs, letters, diaries, case studies, and social media posts, or can be drawn from secondary sources such as biographies written by others and newspaper articles. The analysis of narratives as artifacts can be carried out using discourse analysis, linguistic or narratological approaches, grounded theory coding, source criticism, or content analysis.

One such approach, known as social representation theory, has been the basis for a number of empirical mixed-methods studies. Individual stories are determined by shared social experiences and story frameworks, but at the same time stories created and told from different individual perspectives of an event become part of the social dialogue. Narratives, the social constructs of social reality, can thus become objects of study.

The content analysis of sources – be it dialogues reflecting on social situations, texts recorded through interviews or audiovisual oral history narratives – allows for a complex analysis of socio-political phenomena. In a narrative, it is possible to visualize the frequency of the manifest textual elements and the emergence of certain patterns. The annotated motifs become quantifiable and can be analyzed by mathematical-statistical methods in narrative psychology and sociology. Political narratives, discourses and, more broadly, cultural-political-social discourses can be explored through content analysis of newspaper articles, interviews, or social media content.

A learning diary in education studies is a specific, problem-focused narrative in which students or teachers reflect on their own learning process in relation to skills development or methods. The content analysis of the learning diary also provides detailed information about the difficulties individuals face, their coping strategies and the applicability of learning techniques. Studying the teaching profession requires a complex research approach. To explore the development of teacher identity, it is most appropriate to do so through the lens of teachers' own professional narratives (Szabolcs, 2012).

In diaries, as well as in life narratives recorded through interviews, the main character is the narrator, whose personal identity can be observed in the narrative (László, 2008). The need to transmit memories is strong in groups that have experienced a common trauma or historical turning point. By using testimonial-type autobiographies, the structure of shared experiences can be reconstructed.

Different approaches to narratives can be realized in the psychological analysis of the individual. One type of psychological study focuses on the role of narratives in dialogues and individual reception. The mainly fictional narratives (e.g., stories, novels, or films) are important tools for the integration of life experiences. In psychoanalytic literature, stories frame unconscious desires. In psychotherapeutic discourse, autobiographical childhood trauma narratives can appear. The task of the therapist is to establish a dialogue with the client, the outcome of which is a narrative that is acceptable to the patient (László, 1999). Another large group of psychological studies is the primary investigation of autobiographical narratives. In such studies, the researcher maps the psychological characteristics of the individual or group through a content analysis of life stories.

An interdisciplinary approach to content analysis prevails in narrative psychology research. By adapting the research methods of corpus linguistics, a new data analysis method for the discipline, named narrative categorical analysis, has been developed. The basic principle of narrative psychology is that individuals and groups create their stories based on different principles. The researcher (or more recently, artificial intelligence software) transcribes the text into elements to create psychothematic modules, hypermodules, and relational modules which can be analyzed using mathematical-statistical methods to match the different psychological categories. Empirical results obtained in this way can be used to describe and predict the psychological state of the author(s).

An analysis system for narrative psychology research, the Hungarian-developed *NarrCat*, consists of modules based on dictionaries representing the general foundations of the Hungarian language, special psychological text corpora (mostly interviews with people in crisis or with psychiatric pathology), and various identity narratives (e.g., national, ethnic, or historical). Text elements are annotated and assigned to modules by the researchers. The main modules of the so-called psychothematic modules are agency, evaluation, emotion and cognition, as well as spatiality and temporality, which can be further subdivided into other submodules. The emotion module is used to explore identity constructs and the ways in which trauma is processed. The evaluation and agency modules provide an accurate picture of intergroup bias as well as internal and external group relations. The cognition module measures the extent to which trauma is processed, while the temporality module explores the subjective experience of time. The spatiality module helps to map the relationships between social proximity and distancing in

borderline patients. The submodules of larger modules can be linked together to form so-called hypermodules, which can act as relational cues to modify the psychothematic modules. The relational modules include denial, peer references and thematic roles (Ehmann, Csertő, Ferenczhalmy, Fülöp, Hargitai, Kővágó, Pólya Tibor, Szalai, Vincze & László, 2014).

Content analysis of autobiographical narratives from psychological and linguistic points of view was used to determine therapeutic progression in the 1990s for the first time. The aim of the study was to explore how language usage predicts the recovery of addicts ($n = 16$). Through a mathematical-statistical analysis of the narrative categories and evaluative codes of the autobiographical texts, it was possible to identify common traits in the texts of those who successfully overcame their addictions. These individuals used linguistic elements in their texts to express the importance of their individual development in either a positive interpretive or negative reactive style. It was also typical that they were less critical of themselves over time or, if they were critical of themselves, they expressed positive thoughts about the treatment program which they were undergoing (Stephenson, Laszlo. Ehmann, Lefever & Lefever, 1997).

Narrative psychology examines subjective experiences in narratives. Events, circumstances, and characters in narratives are always presented from some point of view. One component of analysis in narrative psychology is the psychological perspective, which gives insight into the emotional world, behavior, and thoughts of the characters in the story. The other component is the spatio-temporal perspective, which examines the spatial and temporal relationships between the narrator and the narrative. At the same time, the narratives also include the narrator's evaluation, which is influenced by his or her own goals, emotions and opinions (Tibor Pólya, 2008).

The narrator's spatio-temporal perspective – the meta-reflexivity to one's own narrative – can be measured through the verb tenses which are used. In identity stories, the degree of success in terms of coping with stigmatizing situations as well as the narrator's identity status can also be measured through tense usage. Tibor Pólya (2007) identified the narrator's male and female identity states from the life stories of 20 homosexual men and 20 women who had undergone artificial insemination. The men told their coming out stories, while the women narrated the process of insemination, both representing situations that conflict with social and individual constructions of gender identity.

Through narrative psychological content analysis, the researcher is able to gain insight into the different psychological states of the narrator by analyzing linguistic forms and text structures. In this sense, psychopathological phenomena and psychological disorders can also be captured in autobiographic narratives (Pohárnok, 2008). Typical examples are reflections from psychotherapy or texts from targeted interviews. For measuring the impact of therapy sessions for mothers raising their children in prison, texts were

recorded before and after the consultations. The questions of the *Parent Development Interview* instrument were used to draw conclusions about the mother's perceptions of her own motherhood and her relationship with her child. A narrative analysis of the 15 pre- and post-interview texts revealed typical patterns in the texts, such as guilt or an idealized image of one's own motherhood and the mother's desire to feel needed by the child (Lénárd, 2008).

Social psychology explores perspective-taking (i.e., the ability to place oneself in the position of others) through narrative content analysis. Perspective-taking is the result of cognitive effort, the underlying processes of which can be explored through a narrative analysis of texts. A narrative about a group includes elements of group identity and the representations of the thoughts and actions of the actors. Mental states and actions can be examined by measuring the frequency of certain linguistic expressions in the text, such as verbs expressing emotions or adjectives expressing qualities. In an analysis of textbook narratives on the historical trauma of Hungarian history, 22 textbooks published between 1920 and 2000 and 354 newspaper articles published between 1920 and 2010 were analyzed using the NarrCat algorithm with three independent coders. The use of cognitive verbs in the texts reflected the stage that participants had reached in their processing of the collective national trauma (Vincze, Ilg & Tibor Pólya, 2013). Fodor (2020) investigated the generational transmission of ethnocultural identity through narratives among people of Hungarian origin ($n = 17$) living in the diaspora community in the USA using content analysis of interviews. The cultural and ethnic content of the narratives was carried by the Hungarian language, which in itself acted as a means of group cohesion; the analysis of the narratives and their linguistic devices revealed additional identity-forming elements. Family memories emerged in the in-depth interviews which were passed down between generations in the community, and the interview texts revealed the narrative heritage and metanarratives which made up the identity of second- or third-generation Hungarians. The culture of their ancestors and the culture of the destination country were mixed in the narratives, which revealed a desire to connect to the past and to identify with the vulnerability of the settling ancestors and the assimilation process of multi-generational Hungarians.

Narrative psychological content analysis can be used to map individual or group identity constructs, and can even predict diagnosis through status monitoring in the study of isolated small groups. Such a study was carried out by a team of researchers investigating a space-stimulation environment, specifically the psychological factors that might influence a possible trip to Mars. Social isolation in space was studied through the diaries of six test subjects who lived in an environment for 520 days, the same amount of time it would take to travel to Mars and back. The researchers investigated the physical well-being and emotional status of the individuals, as well as changes in the team spirit of the imaginary crew through content analysis

(Ehmann, Balázs, Fülöp, Hargitai, Kabai, Peley, Pólya Tibor, Vargha, Vincze, & László, 2011). The research team then investigated the capability of the crew to achieve optimal autonomy and time awareness; changes in the emotional states of the participants was examined through content analysis of the textual elements of the diaries. As in the previous experiment, the study group was isolated in extreme environmental conditions for extended periods of time. The diaries of the crew ($n = 18$) who spent the winter in Antarctica revealed that anger, rather than sadness or anxiety, was the predominant emotional state of the group (Ehmann, Altbäcker & Balázs, 2018).

The examination of the temporal and plot structure of stories is an important aspect of any study in which the analysis of natural language processing is relevant. The psychological study of texts is directed towards the qualitative analysis of personal experiences and, in narrative social psychology, towards the exploration of mental functioning and capacities. Tibor Pólya (2020) argues that indicators of the narrator's emotional intelligence are not only directly reflected in the content of the story, but also in the construction of the narrative structure. According to the rules of story grammar, the narrator engages in problem-solving processes in order to resolve the initial complication and achieve a state of harmony. The success of the problem-solving process is reflected in the narrator's story, which reveals whether he or she has sufficient knowledge of how the social world works and how to recognize and understand emotions. The emotionally intelligent narrator also takes into account the specificities of his audience's reception in order to make the story more understandable. The narrative structure of an individual with higher emotional intelligence 'is more elaborated and contains varied spatio-temporal perspectives as well as various narrative evaluations.

The relationship between artistic creation and the abuse of psychoactive drugs was examined by an analysis of autobiographic interviews with professional artists and art students ($n = 72$). Psychoactive substances were used by the artists both for stimulation and relaxation. The narratives could also be used to identify the long-term effects of alcohol and cannabis on the verbal behavior of the respondents (Iszaj, Ehmann, Griffiths & Demetrovics, 2018). In Kalós's (2012) research on addiction, a narrative approach was used to explore the identity of the addicts in a complex way, as well as the factors that led to their current state, the consequences for the present and their future perspectives. The researcher conducted autobiographical interviews ($n = 24$) about drug use and analyzed the narratives using cognitive linguistics and corpus linguistics tools, focusing on the semantic features of language use as opposed to content categories. The linguistic patterns in the study provided insight into the respondents' agency (i.e., their sense of their ability to direct and control events).

Narratives centered around individual stories of illness are referred to as *pathographies*. Dealing with the subjective and objective circumstances of the experience of illness is also subject to narrative analysis. These texts are

not necessarily from interviews, but can be drawn from literary works, and feature films, or can appear on online platforms such as blogs and social media. These autobiographical narratives are not in present tense, but instead represent a process of recovery. The reception of illness narratives is a shared performative act, as it is an enactment of another person's story which has an ethical and emancipatory effect (Nemes, 2020).

Kun et al. (2021) investigated the health deterioration of workaholics (n = 29) using semi-structured interviews and thematic content analysis. The validity of the qualitative study was ensured by the research team through researcher triangulation. Both the coding of the interview transcripts focusing on physical health and stress management and the data analysis were conducted by independent researchers, and reliability was ensured by the research team through repeated data analysis. Thematic analysis, a specific form of content analysis infused with narrative elements; was utilized by the researcher to record their impressions at the interview transcription stage and develop a hierarchical system to organize themes and sub-themes when coding. It is important that the elements that fall under each theme are logically related to each other, and that the researcher can formulate the logical connections between the themes in a meaningful and effective way, which also requires the selection of less significant elements. Thematic analysis responds to the research questions and is embedded in a narrative structure which is essential and avoids redundant elements (cf. Kun et al, 2021; Braun & Clarke, 2006). The method presented the researchers with a number of decisions and thus encouraged them to be constantly reflective. Their results not only showed that there is a link between overwork and health deterioration, but also revealed qualitative aspects of the topic.

CHAPTER 2.

THE (IMPACT) ANALYSIS OF NARRATIVES IN THE HUMANITIES

The analysis of narratives in different representational systems as primary sources is evident in the fields of literary studies, film studies, and art theory.

Narratological approaches are particularly relevant to the analysis of verbal and cinematic narratives in both literature and film studies. Film is a performing art with a dramaturgy which communicates through language and mimesis. When analyzing a film narrative, the researcher examines the sequence of events in the narrative, how the plot threads are connected, what plot twists are present in it and how they fit into the narrative structure, or even whether there are genre patterns in the plot line. Researchers may also show interest in examining the extent to which certain visual or audio elements of a film are integral to the plot. In addition, they may compare the representation of several plots (the *syuzhet*) of a story (the *fabula*) – in the case of cross-media storytelling, this also means taking into account the

representational specificities of each medium. In the analysis of literary and film narratives, a new dimension can be opened up by examining corporeal narratology, which deals with the concept of the narrative body (Kérchy, 2009), but approaches such as the exploration of intertextualities (Orosz, 2003; Lanszki, 2016b) and the study of metanarratives (Orosz, 2003) may also prove relevant.

Narrative structures can also provide valuable insights into interdisciplinary boundaries that lie at the intersection of the humanities and social sciences. Cultural anthropology focuses on contemporary narratives, while ethnography and history use narratives from the past to map the patterns of behavior, habits, and rituals of micro-communities at particular points in time. The ethnographic textual analysis of narratives featuring superstitions has provided important data on the magical thinking and customs of medieval people (Pócs, 2012). In addition, the study of earlier narratives is useful for any research that aims to explore the historical dimension of a topic – such as institutional history and life history in education and art history, or performance reconstruction in the performing arts, which also analyzes musical scores, costumes, set design and reviews. Primary sources may include letters, newspaper articles, recorded jokes, gossip, transcripts of court hearings, diaries, laws, internal organizational decisions, or even artifacts.

The wealth of resources resulting from media convergence allows media studies to analyze narratives in a variety of formats. One research direction which is relevant in this regard is the genre analysis of narrative formats. Császi (2010) undertook a formal analysis of a single episode of a famous Hungarian talk show about divorce, examining the interactions between the moderator and the invited guests. The researcher found that the fable behind the narrative emerged in the episode's opening confession, conflict-unfolding reflective dialogues, and confrontations. Császi also identified Proppian features and Lévi-Strauss' binary opposition pairs in the talk-show episode. In accordance with the logic of the narrative structure, moralistic moments were also presented: the losing party made a confession and the show delivered justice between the parties. Elements of film language (such as close-ups) also aimed to increase the audience's sympathy with the victims.

Another area of media studies focuses on the portrayal of minority groups in the media. Cseke (2017) examined stigmatization by residence in written press products. Research data came from a textual analysis of a narrative interview with residents of a slum and a narrative analysis of press articles from different periods. For the press, the colony was valuable for its criminal narratives and stories of suffering, but these narratives increased the stigma towards the residents. The stigmatizing portrayal of the community in newspaper articles contributed to the negative image of the residents in society. The metropolitan squalor thematized in the narratives satisfied readers' hunger for sensation and exoticism with themes of deviance and filth. Munk (2013) examined the portrayal of Romas in popular entertainment television genres

such as talent shows, talk shows, TV series, and reality shows. She found that while explicit racism was not present in the above formats, popular TV shows reinforced the representation of the musician gypsy archetype in relation to Romas from low socio-economic backgrounds. In addition, ethnicity-related otherness was presented as a curiosity in such programs.

Tamás Pólya (2019) investigated whether Gerbner's cultivation theory, which is mainly used in research on television narratives. He used it as a framework for researching the narrative level of video games and examined whether video games affect the socialization of children. Extensive research has been carried out on the comprehensibility of video game narratives and how the extent to which the structure of branching narratives can be followed.

Empirical research on video games focuses mainly on the various aspects of the user experience, and data is often collected through validated questionnaires, interviews, and tests. The areas include interactor engagement (*Narrative Engagement Questionnaire*, Busselle & Bilandzic, 2009; Brockmeyer et al., 2009; *User Engagement Scale*, O'Brien et al., 2018), sense of agency (*Sense of Agency Rating Scale*, Pritchard et al., 2016), and the sense of transportation (*Transportation Scale*, Appel et al., 2015). Gjøl, Jørgensen, Ramsø Thomsen & Bruni (2018), on the other hand, have examined the neuroscientific background of the gaming experience, using EEG to examine stimuli in the brain triggered by events during gameplay.

Previous empirical research into video games has explored the impact that narratives have on recipients on several levels. Traditional reception and impact assessments have mainly focused on literary and film narratives. Some of the research in this area has focused on the prerequisites for the reception of certain narratives, while other research has explored the psychological and physiological effects of narratives.

Tóth (2002) conducted longitudinal research on narrative comprehension among primary school students. The researcher examined the comprehension of narrative extracts of the same literary text with the same students at different ages. Three main areas of comprehension were outlined in the research: the ability to retrieve data, to perceive events and to understand concepts. The ability to recognize context, compare background knowledge of reality with the literary text and understand the aesthetic message were also investigated.

László (1996) sought to model the human cognitive system through the psychological study of literary text comprehension. He looked for common features in the infinite number of subjective interpretations of literary works in order to shed light on the general characteristics of comprehension. While cognitive social psychology examines individual narratives of the self and uses story grammar as a tool, a different approach is required to study the understanding of literary works. Cognitive psychology focuses on the reception of plot logic. To understand a work, the recipient needs prior knowledge of plot lines in order to identify the goals and intentions of the main characters. A literary work can only be understood through the lens of

one's socio-cultural experience. Based on the theory of social representation, László developed a social-cognitive model of literary text comprehension based on Moscovici (1988), according to which meaning is created by the encounter between the text and the socio-cultural knowledge of the recipient (i.e., his or her social world knowledge, personal experiences, and literary meta-knowledge).

Factors related to the reception of certain literary works can also be examined through content analysis of texts. László and Vincze (2001), in a content analysis of Géza Gárdonyi's novel *Egri csillagok* (*The Stars of Eger*), found that simplified qualities (e.g., knowledge, wisdom, or morality) appear in the actions that both promote identification with and reinforce Hungarian national identity.

Transactive criticism is an approach that falls between literary theory and psychology whose key tenet is that the text cannot be interpreted in itself since the interpreter is actively involved in the construction of the text's meaning through the creation of transactive notes. These notes represent subjective interpretations that cannot be independent of the interpreter's psychic processes, personal life experiences, background, and identity (Holland, 1990). Not only is the text itself a narrative, but the receptive behavior of the recipient is also seen as a narrative system. This is supported by Larsen's (1996) cognitive psychological reading theory, who investigated the factors involved in the recall of reading perceptions. In his study, he found that the reading experience presupposes the recipient's personal and receptive experiences. When the story of the reading is recalled, not only the content but also the circumstances of the reception are evoked in the reader.

László (1998), in his cognitive psychology study on the reception of literary texts, questioned whether genre classification is a barrier or a means of interpretability. Genre theory defines genres on the basis of similar stylistic and rhetorical features, and these attributes determine the quality of the text and its interpretability, which is strongly dependent on prior literary socialization. With genre knowledge, the interpretability of texts is also facilitated (Olson, Duffy & Mack, 1984).

As in literary studies, research has been carried out on the reception of narrative in film studies as well. The impact of a literary work cannot be assessed during or immediately after its reception, as the reader usually processes the work in parts; however, this is possible in film studies, as films are normally viewed in one sitting.

Vish and Tan (2014) investigated the factors that support film comprehension and found that, in addition to cultural, mental, and physiological processes, genre conventions also influence the reception of films. In their experiment, viewers interpreted the same content differently when it appeared in a different form and genre. Events and style are the most important features of genres.

Empirical research in film studies focuses on the reception of films, with the main focus of the research often being on the experience of the recipient

and the biological factors underlying reception. The research methods are similar to those in the natural and social sciences, particularly neurobiology and psychology, and the measurements – like in every empirical study – are expected to be reliable, valid, and objective. Cognitive film theory investigates the cognitive background of the reception of film narratives. The research approach of aesthetic experience and immersion can be phenomenological, psychological, or biological (neurological) depending on the methodology being followed. Phenomenological studies primarily follow a qualitative paradigm, while psychological and biological studies are often quantitative (Bálint, 2014).

Papp-Zipernovszky, Kovács and Drótos (2019) used a mixed methodology design (data was collected via EEG and verbal word association) to measure the psychophysiological activities that occur during the reception of narrative and non-narrative film structures. The research team aimed to explore attentional and emotional cognitive processes rather than the conscious, verbalizable processes of reception. Based on patterns of brain activity which occurred during film viewing, it was found that viewing a non-narrative film was a more demanding memory task for the recipients due to the lack of spatio-temporal continuity and causal connections. The results of the word association test showed that the use of the same terms is less frequent in the reception of non-narrative films, thus there is less social consensus in individual interpretations. Thus, the research concluded that the reception of non-narrative films was strongly dependent on the personality of the individual.

A phenomenological approach can be seen in the qualitative analysis of subjective film experience, where respondents are asked to formulate their immersion experiences with fictional stories. Film immersion experiences are recorded through interviews, open-ended questionnaires or narrative diaries, although the validity of phenomenological studies has been called into question as they draw their conclusions by from the analysis of self-reported data. Such research can be replaced or complemented by measurements focusing on physiological parameters (e.g., heart rate, eye movements, skin sensations, or cerebral blood circulation) (Bilandzik & Busselle, 2017).

Phenomenological studies examine immersion in literary or cinematic narratives from two main aspects. One is the extent to which immersion in the narrative's plot world has occurred. The other aspect is the extent to which the aesthetic experience of an artifact, which is shaped through language or visual elements and organized into a specific narrative structure, evokes immersion (Kuijpers, Hakemulder, Balint & Doicaru, 2017). A number of techniques can be used for empirical research examining the impact of the narrative. One such example is a questionnaire study (n = 210) that demonstrated that the delaying effect of *suspense* enhances viewer immersion (Bálint, Kuijpers & Doicaru, 2017). In another recall study, using Lichtenstein and Brewr's method, the respondents were asked to highlight narrative elements that had an impact on the film experience. The qualitative case study revealed

the psychological-emotional and narrative-related film experiences the recipients had (Bálint, Tan & Doicaru, 2014). Oliver and Hartmann (2017) also undertook a questionnaire-based investigation of film experience, asking their subjects ($n = 271$) why a film was particularly meaningful or enjoyable for them. Analysis revealed that melodrama and comedy were the genres most frequently cited. The respondents provided self-reflections from which the researchers were able to identify basic emotion types. It was found that the most identifiable emotions when watching a film were happiness and sadness, but feelings of compassion and anger were also identifiable from the responses (Oliver & Hartmann, 2010).

The expression *narrative transport* refers to the phenomenon through which the narrative transports the recipient into another mental sphere, placing them within the storyworld at the time of reception. During such an experience, the receiver forgets the space-time relations of his or her real environment. The phenomenon is based on the cognitive (i.e., attentional and imaginative) and emotional processes of the receiver, which can be measured by the 15-item, 7-point Likert scale questionnaire entitled the *Transportation Scale* (Green & Brock, 2000). The degree of transportation can be influenced by a wide range of background variables related to the recipient (e.g., biological and sociocultural factors), as well as by narrative elements of the text (e.g., techniques of plot development or character portrayal). Experiencing through transportation and identifying with the protagonist can also lead to changes in the recipient's attitudes and beliefs (Fitzgerald & Green, 2017). Immersion in the storyworld was investigated in a large sample ($n = 500$) by Dixon and Bortolussi (2017), who asked participants questions about their most recently read novel. A structural model of the responses revealed that the emotional response during reading influenced narrative transport, and the generation of emotional response was strongly related to the extent to which the readings were connected to the recipient's personal memories and the extent to which the storyworld felt realistic.

The ability to recognize words, control eye movement and manage the functions of the reading center present in the left hemisphere are all biological prerequisites for immersion in literary texts. However, many more areas of the brain are activated during reading, including the performance of complex operations such as recognizing words, interpreting what is read, forming hypotheses and identifying plot events through patterns and scenarios (Jakobs & Lüdtke, 2017).

Affective neuroscience uses films to study the unfolding of emotional experiences over time as well as the emotional aspects of film reception. The combined use of cinematic tools of expression and genre conventions elicits an emotional brain response which can be measured by MR examination and analyzed by quantitative methods. Laboratory studies can investigate viewer responses to stimuli in dramatic film scenes. In one study, the brain activity of two subjects was compared while one subject watched a dramatic

film clip and another subject watched a more neutral film clip. In another type of study, the effect of a film on several recipients was investigated. The researchers examined if the same film elicited the same response from the recipients. A variation of this type of study examined emotional responses by projecting a film clip with or without manipulation (such as sound or a change of color) (Raz, Hagin & Hendler, 2013).

In the field of art psychology, Kovács and Papp-Zipernovszky's (2019) investigated the relationship between the narrative structure of films and the personality traits of the audience. The empirical study focused on how viewers created a continuous plot from fragments, and formed causal relationships between episodes. The researchers recorded the hypotheses of the audience about the continuation of the plot by stopping the film sequence by sequence. Content analysis was used to determine which parts of the film narrative elicited causal inferences from the recipients. The researchers also distributed personality tests and found that openness to experience was a personality trait that contributed to a more thorough exploration of the causal relationships in the film narrative. The impact of a Hitchcock film on personality was also measured in the research. The personality functioning patterns of recipients ($n = 51$) were assessed before and after watching the film using projective techniques and personality tests (Fecskó-Pirisi, Urbán, Martos & Nagy, 2014).

Bálint, Blessing and Rooney (2020) investigated the effect of close-ups in film clips on a large sample ($n = 495$). The researchers wanted to find out to what extent close-ups of the faces of film characters changed the reflections of the viewers. The recipients were asked to reconstruct the narrative of the film, and content analysis of the transcriptions showed that close-ups of the characters helped the viewers to identify the characters' emotional states.

CHAPTER 3. STORYTELLING AS TOOL AND OBJECT OF RESEARCH

The storytelling process itself can become both a tool and an object of research, especially in qualitative ethnographic and anthropological studies. Some of this research focuses on the role of storytelling in the community, especially on the storyteller and the function of the storytelling act. Another type of research in this vein is fieldwork, in which the researcher is involved in the life of the community under study. The researcher records research experiences and reflections in a diary and actively participates in the shaping of the research narrative. A third research approach is art-based participatory action research, in which the researcher and the research subjects create artifacts as a community and share experiences during the process.

Keszeg (2011, pp. 85-86) identified eight directions for anthropological research on storytelling, which can be narrowed down to three main areas: (1) *Eras and Society*, in which the researcher examines the typical narratives

of an era as well as their structure, genre, and media with a special focus on the status of narratives; (2) *Places and society*, in which individual, local and regional narratives are examined by the researcher alongside the speaker, rememberer and interpreter communities. The legitimacy of the story within a community is also a relevant topic, with researchers focusing on stories that are kept and told within a community; And (3) *The Functions and Actors of Storytelling*, in which the different situations and values of storytelling and the narrative identity of the storyteller can be explored, as the social act of storytelling is linked to typical life situations (family gatherings, joint work, and travel). Keszeg views the purpose of storytelling as entertainment, with storytellers and receivers sharing time together and passing on idioms, behaviors and story structures learned from their ancestors. Storytelling also takes gender roles into account, with different stories for men, women and children. The storyteller tells the story with a distinctive voice and posture, sometimes even singing.

Every age has its own dedicated storytellers, whether they are called magicians, storytellers, bards or even stand-up comedians. In addition to the well-researched narrative structures and sub-genres of oral tales, the biography of the storyteller, his or her performance style and the social conditions of storytelling are also areas of interest for ethnographic research. The narratives of different periods are explored through source analysis embedded in the historical research paradigm. Biographical and autobiographical narratives reveal the values and worldviews of different periods among local communities, as well as information about specific regions and environments.

The function of storytelling can also be a subject of research. All communal storytelling follows a certain set of rules. The spread of stories within a family or small local community is natural among members of a group. Everyday storytelling is less conventional, as the narrator and the recipient can be of any gender, or age, and the storytelling can be spontaneous or organized. Traditionally, situations such as family conversations and shared work talk fall into this category. *Ritual*, also known as *festive* performances, however, are norm-bound. They are scripted and there are behavioral norms for narration and reception. In *religious-magical* storytelling, the narrative has a healing, anti-malignant role, and its performance is time- and situation-bound. *Formal* storytelling, on the other hand, is typically linked to the normative world of education, politics, and law-making (Keszeg, 2011, pp. 67-68).

Edward M. Bruner, as a representative of interpretative anthropology, used the narrative approach in his ethnographic research and considered narrative dialogue as the basis for meaning-making. In this approach, the interpretations and storytelling of the participants and the researcher are not independent of each other, and the researcher's meaning-making itself is expressed in the temporal linearity and sequential architecture of the narrative structure (Bruner, E. M., 1986).

A good example of the autoethnographic approach is Mészáros's (2014) research on school subculture, in which he analyzed literature, sampling data, as well as his own experiences with emerging new research questions. The researcher was fully immersed in his environment during the fieldwork, the purpose of his participation being detailed data collection. He described the research process in a reflective narrative diary. During his direct contact with the group, the researcher himself underwent the process of initiation and fulfilled different roles in the group. The study revealed the dual position of the researcher, being both a member of the group and the objective, interpretative researcher. This research also highlighted that the researcher is the main measuring instrument in field research. Observing and selecting data from his interrelated position, developing and formulating new research questions during the process.

Ethnographic research can be considered narrative when the researcher collects and analyzes the individual and group stories of respondents during their fieldwork. Narrativity can also become a methodological category when the researcher reflects on the research process in a narrative diary, and researchers create academic texts which feature narrative structures. In this case, the researcher analyzes and creates a new text as an author. In qualitative research, the notion of validity can be replaced by the concept of authentic voice, which the researcher can provide by gathering information from as many sources as possible (Mészáros, 2014).

The main methods of data collection in fieldwork are observation and unstructured autobiographic interviews. The ethnographer is a storytelling researcher, so the emergence of ethnographic and anthropological research in the 21st century can also be realized in multimedia environments. Cultural information can be presented in multiple layers (e.g., story, film, and photo) in online environments. Recipients can engage and create interactive dialogues on new platforms, thus realizing the open-endedness and continuity of narrative processes. Digital interfaces enable ethnography and anthropology to engage in collaborative processes between data providers, researchers, and recipients. Online action research can be carried out with the participation of all parties (cf. Underberg & Zorn, 2013; Forte, 2004).

At the same time, digital environments also enable the self-representation of certain closed cultures. Researchers and research subjects can work together to collect data and design and present online content. Together they can create a thematic website with a gallery of images, hypertext links, an online game, or a social media platform where offline events can be discussed (e.g., a cultural festival). Through research, the community can jointly develop a transmedia story-making process to preserve cultural heritage, and can make their community more attractive through images, language-related audio materials, and games on thematic websites and social media platforms (Underberg & Zorn, 2013).

Arts-based participatory action research is a qualitative research strategy that is particularly suitable for enabling vulnerable respondents to articulate unbiased information about themselves and conducting research on sensitive topics (e.g. political conflict situations, financial background, gender, national, or religious identity) while sharing a creative experience. Arts-based participatory action research methods differ from action research in that the researcher not only actively participates and acts as an observer in the group process, but also mentors the whole process through promoting artistic creativity. Such research is based on the creative collaboration of the participants and the facilitating presence of the researcher and provides added value for the researcher, providing them with the possibility to analyze inter-process dialogues, body language and finished products, thus allowing for the complex exploration of the research topic. The process has a transformative effect on the participants, leading to direct psychological growth as well as increased competence and personal development. Through artistic activities, and repressed emotions and thoughts are brought to the surface through dialogue. The whole process is highly reflective and collaborative, involving both individual and group development and promoting cultural change (Horváth & Oblath, 2015; cf. Lanszki, 2020).

In narrative-focused art-based participatory action research methods, the researcher examines the process of narration, including the circumstances, motivations, levels of storytelling and the product itself. Such methods include *Photo Voice*, *DST* or *Forum Theatre*.

In the *Photo Voice* method, participants take photos of a relevant issue which they then interpret. Through the images and the narratives attached to them, participants present to each other hidden or overlooked phenomena in mainstream society, which helps the group to identify social issues (Oblath & Csoszó, 2017). The method reveals individual and shared experiences, allowing participants to discuss the differences between their experiences and analyze the stories through the images. The problems articulated in the specific photo-narratives are then addressed by the group members as they collectively try to propose solutions, potentially through the development of action plans (Wang & Burris, 1997). The visual and verbal narratives can also be published in online or offline exhibitions.

Photo Voice can be used as a tool for both research and pedagogy. A lecturer in health sociology in South Africa conducted an action research study using *Photo Voice* to explore inequalities in access to health services by gender, ethnicity, and socio-economic background (specifically educational background and living environment). Due to the nature of action research, the researcher was part of both the pedagogical and research process. Freire's (1972) principles of critical consciousness, empowerment, and reflective knowledge construction were used to conduct participatory photo-voice sessions. The students (n = 334) took photographs related to the given topic and wrote texts for them. While constructing the story, the students linked their narratives to

personal life episodes. This creative activity was followed by interviews and a focus group discussion in which the students formulated critical reflections on the living conditions and gaps in care for vulnerable groups. In the process, students from different socio-economic backgrounds developed closer relationships and formulated action plans (Obuaku-Igwe, 2021). The Photo-Voice project represents a learning process with an intercultural approach and a transformative effect, as students undergo changes in attitude. The stories and dialogues revealed the details of the examined social problems, which provided significant findings for the research.

A combination of Photo Voice and research interviews is the *Photo-Elicitation Interview* (hereinafter referred to as PEI), which was used to interview adolescents by Pabian and Erreygers (2019). The researchers explored the prevalence and forms of online bullying and found that during individual interviews adolescents had difficulty recalling everyday life events related to bullying. The researchers avoided using focus group interviews for data collection, as the compliance constraints related to the age of the participants would have influenced their data. The researchers decided to use PEI, a participatory narrative research method in which a photograph taken by the researcher or the interviewee forms the starting point of the individual interview. In designing the method, the researchers also took into account that their research subjects ($n = 34$), a sample of 13-14-year-old Belgian students, interacted online with peers through pictures. The target group was present on social media platforms where self-presentation and messages are characterized by fragmentation: adolescents communicate using less written text and more voice messages and memes. The students had to choose three images a day for five days for the research, which also could be screenshots. The researchers did not specify the content, but the adolescents were informed that they had to document their interactions with their peers. Students could only take the pictures with their peer's consent, just as they could only participate in the research with informed consent. After five days, the researchers recorded semi-structured interviews with the students, who were asked to describe the characteristics of their everyday online interactions based on the pictures. The coding and annotation of the interview transcripts and pictures were carried out independently by the two researchers using Nvivo software. This method allowed a deeper insight into the world of online adolescent communication. Although the students found it easier to evoke their experiences in interview situations with the help of images, the method had certain limitations: the data were still idealized in many cases, as students did not send photos referencing negative events. Moreover, the sending of pictures was also highly dependent on the students' knowledge of technical tools.

Arts-based participatory research methods include the dramatic *Forum Theatre*, which actively involves the audience in solving the moral dilemmas of a pre-written play. The audience is a special group that can make comments,

vote, or even re-direct the play or re-enact certain episodes at turning points in the plot. The spectator becomes an insider and an active participant, developing action plans to help solve dilemmas (Boal, 1985). Although the framework of the play is predetermined by the dramaturge and the director, the narrative of the performances always evolves according to the intervention of the audience (Oblath, 2017). The researchers obtain data from video recordings of the performance and may conduct a focus group or individual interviews with the participating audience members after the performance, who may be asked about internal processes taking place during the play (Lanszki, 2020).

CHAPTER 4. ORAL HISTORY AND DIGITAL STORYTELLING IN SERVICE OF COLLECTIVE SOCIAL MEMORY

Oral History is a form of personal history relayed orally, a specific form of historical documentation with a tradition dating back to 1948 when interviews with important historical figures in American history were recorded using technology. Oral history differs from the intergenerational oral transmission of cultural traditions, as oral history is a purposeful methodology rather than a spontaneous act of knowledge transfer (Leavy, 2011).

As a research method, oral history has sampling procedures and specific tools for analysis. Researchers interview members of a specific population in order to gain a multi-directional understanding of a particular cultural-historical topic. In order to select the sample group, the researcher must first assess the literature and sources on the broader topic to identify gaps that need to be further explored in order to aid in the selection of the interviewees. Random sampling, which ensures reliability in quantitative research, is therefore excluded in oral history research. Snowball sampling is used rather than probability sampling to find oral history interviewees – especially in the case of particularly sensitive topics or vulnerable populations (Leavy, 2011).

The aim of all oral history research is to gain deeper insight into the interviewee's personal experiences, opinions, and perspectives, a goal which significantly determines the characteristics of the interview. An oral history interview is always an autobiographic narrative interview and consists of open-ended questions. Sometimes, several interviews are conducted with the same person in order to gather as many details as possible. The virtue of autobiographical narratives is that the narrators not only list events in a factual way, but also reveal the social context and individual circumstances, the relationships between the actors, the motives behind the behavior and the consequences of the actions. The researcher does not interrupt the interviewee while he or she is speaking, allowing them to narrate and interpret the life events freely.

Trust between the researcher and the interviewee can only be established through cooperation. Although the interview setting contains fixed content nodes, the conversation can be flexible. The researcher and the interviewee should act as equal partners in the research process, which helps to broaden and deepen the topic in detail. However, the creation of collaborative knowledge raises the issue of shared authority (Frisch, 1990, cf. Leavy, 2011). Shared authority can be seen in data recording and in the interpretation of events, and allows for the narrator to correct the researcher if the researcher misinterprets a phenomenon. In oral history research, the subjects are not referred to as the data provider or respondent, but rather the term narrator or participant is used. These expressions refer to the nature of the research, the role of the interviewer as the narrator-interpreter, and the collaborative construction of knowledge. The researcher must take care to separate the analysis of the researcher and that of the narrator when publishing research findings (Leavy, 2011).

Positivist researchers criticize oral history researchers based on the bias and lack of objectivity present in the research methodology. At the same time, oral history videos and audio recordings are personal narratives that constitute a data corpus accessible to any researcher for content analysis. By transcribing and coding the narratives, certain content elements can be quantified and typical patterns can be identified based on their frequency. However, text analysis can also be complemented by observational metacommunication analysis in oral history research, as the body language and prosody of the interviewee can also provide additional information. Leavy (2011) argues that the methodology of oral history research in the social sciences is strongly based on the qualitative methodology of *grounded theory*, as data collection and analysis leads to further data collection and analysis, eventually leading to the development of theory from systematic data analysis. Mitev (2015) argues that the advantage of grounded theory is that it allows the researcher to approach social, context-dependent behaviors in a structured way, as it systematically increases the sample in the process of data collection and requires the constant interpretation and comparison of data. This approach is relevant for the methodology of oral history research.

Researchers of personal narratives in the social sciences, especially in sociology and history, situate individual micro-narratives in a broader socio-cultural and economic-political context. In cultural anthropology, comparative culture studies and any field of the humanities with a historical-social research orientation (e.g., theater history or dance history), oral history narratives provide important sub-data for the reconstruction of a cultural construct.

The traditional form of oral history is narration through interviews within the framework of organized research, recorded in audio or video format and systematically stored in archives. Video technology and the emergence of video-sharing portals have made it possible to record and share historical testimonies: edited versions of in-depth interviews recorded about a historical

event. Historians have recorded many individual oral history narratives, which have been organized by cultural institutions (mostly libraries and universities) into databases that are also available online.⁴³

Iwitness is a collection of Holocaust survivor and eyewitness testimony videos founded by Steven Spielberg in 1994. The *USC Shoah Foundation's* video interviews have been collected over 12 years and are available in 24 languages from 57 countries. Pedagogical best practices were used to develop the videos which included student engagement, discussion, and creative activities. The integration of DST was a natural fit, as it incorporates students' reflections on first-hand stories, combined with the student's prior knowledge and experience. The method allows learners to cut out extracts from original oral history videos and incorporate them into their own digital stories. Reflective videos thus reveal information about historical events as well as the students' knowledge construction (Cole et al, 2013). Similarly, personal reflections were also present in the digital stories produced by Spanish students based on online interviews about Syrian refugees. The students gained new knowledge in the process and put their own life situations into perspective when confronted with those of young people their own age (Diaz, 2016).

The Concordia University Centre for Oral History and Digital Storytelling in Montreal, Canada⁴⁴ has also been publishing digital stories of genocide (e.g., Rwandan, Jewish, and Cambodian) survivors on its website. The website's page views showed that there were few clicks on interview recordings, prompting the institute to include DST, as the compact format of digital stories makes them more accessible to a wider audience (High, 2014).

Testimonial videos also have a social impact. Many oral history projects bring to light the lives of people from marginalized contexts or those who have suffered serious historical trauma. These narratives, as primary sources, bear historical witness and are preserved for posterity, while at the same time highlighting cultural and social differences in the present.

The narrators can both recall episodes from the past and talk about their daily lives. A collection of information such as this was the aim of the Museum of London's *London's Voices* program. Other examples of narrative self-expressions can be found in social media. One such example is the *Humans of New York* Facebook community,⁴⁵ which started as a spontaneous photo catalog in 2010 to upload images of New Yorkers walking around the city. However, a photographer started interviewing the individuals who were photographed and the stories started appearing alongside the images. The group now has over 17 million members and over the years has been a platform for sharing thousands of stories from around the world. The social

⁴³ <https://www.oralhistory.org/centers-and-collections/>

⁴⁴ <https://storytelling.concordia.ca/>

⁴⁵ <https://www.facebook.com/humansofnewyork>

media posts have been turned into books and a website which categorizes the stories by country and by topic.⁴⁶

On other web 2.0 platforms, such as *YouTube*, anyone can comment on testimonies about abuse or addiction. In her research, Iyanga-Mambo (2021) found that the comments section on Web 2.0 platforms can serve the function of a reflective support group. The commenters expressed solidarity in an asynchronous but expressive way which is similar to the interactions seen in self-help or narrative therapy groups. Social media has provided an opportunity for survivors of similar events to express their support through their comments and sometimes engaging dialogues which develop under the posts.

Another form of oral history research is the study of personal oral history narratives evoked in participatory community art workshops from a Freirean framework (1972). A *participatory public history* workshop usually uses the tools of arts-based research to engage members of a small local community to explore the narratives of the community and its individuals collectively. The projects end with a product that addresses the personal life stories of the participants. Oral history narratives can take many different forms: they can be published on different Web 2.0 platforms such as blogs, vlogs or even podcasts, but social media is also a great medium to share such projects.

In São Paulo, the *Museu da Pessoa* (Museum of the Person)⁴⁷ began a unique experiment in the early 1990s. The virtual and collaborative museum presented individual narratives, regardless of whether they were the stories of famous or ordinary people. The aim of the museologists and historians was to create a collective communal memory. The narratives are not collected by professional librarians or researchers, but can be recorded and submitted by the narrators themselves. The community platform also allows narrators to create their own archives where they can upload other people's life stories. The *Museu da Pessoa* has already branched out to Portugal, the USA, and the UK. Between 2006 and 2008, the cultural and social institution, together with youth NGOs, carried out a large-scale DST project called *One Million Youth Life Stories*. The project aimed to give young people in Brazil the opportunity to showcase their identities and understand their role in history by publishing their stories on different platforms (e.g., social media, video sharing, and museum exhibitions). The young participants could create their life story narratives in any format, but the DST workshop provided an opportunity for them to discuss their dreams as well as difficulties with their families and cultural background in a focused way (Misorelli, 2017).

For the DST method developed in *StoryCenter*, Hill (2008) created a research and education program that provided an opportunity for geographically distant groups to reflect on their individual life situations as well as on global

⁴⁶ <https://www.humansofnewyork.com/>

⁴⁷ <https://museudapessoa.org/>

social problems. Similarly, the personal digital stories produced in the *Silence Speaks* project⁴⁸ addressed highly sensitive issues, focusing on public health problems (e.g., HIV prevention and domestic violence) and raised awareness among the public and policy-makers.

In oral history narratives and digital stories, narrators organize their experiences of historical-cultural events in a causal context. This is done through reliving their own experiences as they narrate, reflecting on the events as witnesses, and thus interpreting them. The narrators include moral values and self-reflections in the narration and draw conclusions from the story. The more oral histories or digital stories are revealed about an event, the more perspectives and details the researcher and the recipient can examine. Although these narratives are individual stories, they can also contribute to the construction of a collective social memory.

In various social science discourses, the question arises as to which interpretations are considered “true” and congruent in relation to a particular topic. This question is particularly relevant to history and its interpretation since there are as many individual readings of an event.

It is worth examining how individual memories relate to the collective memory and cultural heritage of a nation. The concept of memory can be approached by different disciplines and researchers, including historians, sociologists, anthropologists, aestheticians, communication experts, as well as narrative and experimental psychologists.

Sonkoly (2005) interprets cultural heritage from a historical perspective, drawing from the research fields of heritage and memory. He considers individual commemoration as part of collective historical memory, in place of or in addition to the commemoration at the religious or national level. In order to reconstruct historical events, it is essential that individual narratives, or so-called testimonies, evolve. They are often uncensored, giving individual memory-growing autonomy and impact.

The rememberer contributes to the construction of history as a witness to past events. According to László (2003), a narrative is a cognitive tool which can be used both in the social (and historical) space and in the individual’s process of self-understanding. According to narrative psychology, memories are narrative constructs that cannot be disconnected from the cultural narratives of a given society. The narrative is thus dual in nature: the individual constructs history through narrative, but its cultural schemas can have repercussions on individual narrative construction. As Bruner wrote: “*It is through our own narratives that we principally construct a version of ourselves in the world, and it is through its narrative that a culture provides models of identity and agency to its members.*” (Bruner, 1996, p. 14)

⁴⁸ <https://www.storycenter.org/silence-speaks>

At the same time, narrative construction cannot be separated from the phenomenon of identity construction. As Murai and Tóth (2011) explain, memory is

[...] a construction of meaning that (1) is a common product of the participants' communication; (2) always takes a particular form under the influence of the given situation and circumstances; (3) is made from the horizon of the present, which determines selection and interpretation (Murai & Tóth, 2011).

The project entitled *The Soá Family Narratives/Vitrin project* approached the Holocaust through family memories and DST. The project was carried out in 2013-2014 in a number of Hungarian secondary schools under the Active European Remembrance program, and was organized by the Anropolis Association. The aim of the project was to create intergenerational communication and remembrance. A project with the same aim called *We Tell In Pictures* was organized in 2015 by the *Yad Vashem Institute*, the *Holocaust Memorial Centre* in Budapest. In the first prize-winning digital story, *Zimmermanns' Maid*, the student told the story of her great-grandmother, who had to witness the persecution of her beloved employer and her family.⁴⁹

The difference between digital stories and oral history narratives is that in DST projects the story is not in the form of a self-narrated testimony but is included in the narrative of another person. Furthermore, while oral history takes the form of a monologue, DST involves an interview process. In DST projects the memory construction initially unfolds in a dialogue. The individual memory story contributes to the cultural identity of a small community.

Andó (2011) also views history as a construct with a specific identity-forming function and emphasizes that storytelling is a social, communicative act. In her view, the spoken narrative is a discursive genre and a cognitive schema that plays a fundamental role in memory and the formation of individuality. Andó stresses that collective memory can be derived from individual memories, with the collective reconstruction of memories creating an emotional intimacy within a community that binds the members of the group together.

László (2003) and Andó (2011) also refer to Assmann's theory of communicative and cultural memory. The fundamental difference between the two types of memory is that communicative memory is based on direct interpersonal oral narratives. It problematizes the relationship between the individual and history while also generating intergenerational dialogue. However, the elements of cultural memory are schematized narratives that help to establish contact with memories that are temporally out of reach and can only be authenticated by special persons (e.g., shamans, scholars, or

⁴⁹ <https://www.youtube.com/watch?v=NVvIBNot-uY>

priests). In this sense, the students' short films linked to the above projects are typical representations of the communicative act of remembering since the digital stories discussed are manifestations of the personal experience of still-living individuals in a reinterpretation with the heir.

The communitarization of memory is actualized in the process of sharing, which can take place offline or online. Online publishing makes short films available to a wider audience on the Internet, making the publicity of the narrative indefinable. Digital stories, as cinematic manifestations of communicative memory that can be shared, presuppose a dialogue between the perpetuator and the perpetuated. This allows the communicative memory, in the Assmannian sense, to become a cultural memory over time.

CHAPTER 5.

DIGITAL STORYTELLING AS AN ARTS-BASED COMMUNITY PARTICIPATORY ACTION RESEARCH METHOD

According to Horváth and Mitev (2015), the aim of qualitative research is to make interpretable the events, roles, life situations or even interpersonal interactions that can only be brought to the surface if the researcher becomes immersed in the everyday life of the research subject. A new trend in the qualitative research paradigm is a focus on the self-articulation of research subjects through art-based exploratory methods. This can be seen, for example, in the interpretative photo interview, in which the conversation starts with a photo relevant to the topic (Horváth & Mitev, 2015) or in Photo Voice, in which the research subjects take a photo of objects relevant to a particular topic and then narrate it.

DST, like Photo Voice, is a qualitative method of exploring life events and relies on creativity. Both methods are based on participation and collaboration, and their primary aim is to enable marginalized social groups to articulate their own perspectives in order to draw attention to real social problems (Matthews & Sunderland, 2013). In Photo Voice, the photos are first taken by the participants, who then form the narrative. In DST, the first step is to identify the problem and then form the narrative, and only then does the compilation of the visual material take place.

The advantage of DST compared to oral history is that the exploration is not carried out through an interview situation, where the interaction with the researcher can directly affect the narrative or, in the case of sensitive topics, make the narrator feel uncomfortable or even vulnerable. DST also has the advantage of immersing the narrator in the creative process and allowing him or her to form the narrative throughout the workshop in a complex way through the digital story, using images, sounds, and intonation. The narrator can express emotions that cannot be described in words through music and symbols. This mode of expression is also used when the narrator's

vocabulary does not allow for precise expression or when verbal expression is may be too painful.

According to Lanszki and Horváth (2017), DST can be seen as a participatory version of classic narrative autobiography research, where the facilitator-researcher creates a framework in which participants can work together to (re)construct their life stories. Matthews and Sunderland (2013) analyzed thousands of digital stories to observe how well they can be used to obtain data on the quality of life, socio-economic and socio-cultural status of different social groups or on particular social phenomena. It was found that biographical data, perspectives, and reflections observably appear in digital stories Not only verbally but also visually. This can be seen in the way that the creators of the narratives present their living conditions. Digital stories can also be regarded as data corpora and are therefore valuable sources for qualitative sociological and anthropological research, as they reveal life situations and social structures that cannot be authentically revealed by other methods.

Eglinton, Gubrium, and Wexler (2017) define DST as a qualitative, transformative, arts-based research tool. It is qualitative in that it makes ethnographic study possible, and is arts-based in that it involves participants in text and image creation. It is also transformative in the sense that the process of DST causes changes in the participants. The participants articulate their identities, reflect on their roots, and realize their potential for action. They become aware of their own agency and their capacity for social action; in this sense, DST can also be viewed as a democratic action.

DST is an excellent tool for creators to express themselves and articulate their collective group identity. The method is also a critical, participatory research tool, as the discourses and reflections that take place during the creative process allow participants to develop a critical attitude towards their own situation and circumstances. The process is participatory, as the narrators interact with their peers to construct their individual creations. In terms of data, dialogues taking place during these workshops can be just as important for researchers as digital stories.

According to Lambert (2002/2013), DST can help anyone become and remain 'somebody'. In the discursive process of DST, listening and making space for the silenced is an act of "[...] *making room for the nobodies in mind to find their somebody at heart so they feel like anybody else*" (Lambert, 2002/2013, p. 4). Digital stories created in first person play an important role in helping participants to experience agency. In the process of DST, the narrator, feeling agency, consciously interprets the phenomena taking place in his or her environment and then influences them in order to achieve specific goals. The narrator becomes aware of his or her social situation when creating a multimedia text, and tries to develop a solution and a socially constructive action plan using a narrative schema. This process is aided by the feedback provided by the co-creators and the facilitator.

In *DUSTY*, a social center for young adults, a homeless individual and a school dropout realized the deconstructive nature of their life strategies while creating several digital stories. Later they tried to uncover the helpfulness of the people and institutions around them in order to develop a new perspective for the future (Hull & Katz, 2006). Similar developments could be seen in the *SzívHang* (=Heart Voice) program in which Roma women reflected on their social situation. They reflected on the situations in which they felt the most vulnerable and analyzed how they reacted to such situations and what strategies they used. In the process, they became aware of their own agency, and learned how to act constructively using old and new behavior patterns. Agency in the creative process empowers individuals with a sense of being able to participate as actors in other social acts, as well (Lanszki and Horváth, 2017).

Matthews and Sunderland (2013) consider the genre of DST as a confessional summary. Articulations of marginalized groups that have been silenced in mass media can easily enter the social public consciousness in the form of a digital story. Since the advent of Web 2.0, content does not require filtering by gatekeepers, meaning that amateur productions can easily be made public. The digital story is easy to share on online platforms because of its short video format. Individual life stories constantly go viral on social media, where authenticity is enhanced by relaying first-hand experiences in person illustrated with personal images. The aim of such self-expression is to make society aware of the issues people face and to initiate social or political change.

DST is an excellent medium for demonstrating the problems of underrepresented groups in the media of the majority. Eglinton et al. (2017) examined the living conditions of the Alaskan Inuit population through content analysis of over 200 digital stories. The research team found that DST is an excellent way to make the conditions of socioeconomically and/or geographically marginalized people more visible in mainstream society and to encourage public action by decision-makers.

Data is present in the entire creative and interaction-rich process of DST methodology, especially in the story circle and in the final reflections on the videos and process. As the researcher participates as a facilitator in this process, the research is considered action research. In addition, the researcher observes and analyzes texts and images, but at the same time, being part of the process, he or she may identify new directions for future research.

The data for participatory action research with DST comes from the analysis of the workshop presentations and the content of the digital stories. In addition to analyzing the visual and textual elements, the researcher should pay particular attention to the narratives and reflections at the beginning of the process, in the storytelling circle and during the projection of the digital stories, as they can provide important pieces of information. As the researcher also presents the process elements in the presentation of the research findings, the most relevant presentation of the research is in the form of a case study.

Haigh and Miller (2018) see digital stories as valuable sources as they contain key information highlighted by narrators. In one of their projects, the authors organized a DST workshop on mental health. Participants had to use the concepts of dignity and respect to narrate the event in their life that was most significant to them. The researchers found that the result was forgiveness, reassurance, and mutual empowerment. The researchers held the second workshop for patients undergoing chemotherapy, asking them to provide insights into their expectations regarding communication with the staff. A wealth of information was revealed through the videos that could not have been elicited through other methods of data collection. Haigh (2017) highlighted in an earlier study that the analysis of digital stories as artifacts has taken health research to a higher level, as the narrator's views are presented in a direct way and richly illustrated with images. Haigh considers this raw research data, with more data present in these 3-5 minute videos that focus on the essentials than in a multi-hour interview. At the same time, these videos are easily shared on social media, which can also contribute to the democratization of health care, as the direct exposure of individual experiences can move decision-makers and the whole system towards more optimal functioning.

In many cases, only an inter-professional approach to health service development can help to improve services. In Jamissen and Moulton's (2017) DST study, researchers were participant observers and took notes. Data were supplemented with audio recordings of workshop sessions and an interview with the facilitator. Researchers investigated communication and collaboration within the group: students from different disciplines discussed public health issues (e.g., prevention vs. treatment, what is a disease and what is health) while becoming more familiar with each other's views and approaches. This knowledge sharing led to improved trust and acceptance of each other's life situations. Students also learned how to communicate their views to others and understood that while they do not have to agree, it is important to know each other's views. Personal and professional identities also developed through the interactions.

Studies such as these show why it is important for marginalized social groups to create digital stories, as their videos help to humanize the narrators by showing that underrepresented people or those from minority groups who are generally portrayed negatively in mass media are also parents and working people with everyday problems similar to the members of the majority society. A DST workshop in Malaysia similarly articulated the life stories of a minority community. The participants in question were members of the homosexual community whose lifestyle represents a taboo in heteronormative Muslim societies. The aim of this project was elementary: to prevent extremely vulnerable individuals from being physically attacked because of their sexual orientation. The 10 anonymous videos were shown in an exhibition that was open exclusively to Malay Muslims, and after viewing the exhibition

there was a discussion with the DST facilitator. The audience reception was analyzed through data collected from YouTube likes and comments (Kunga Thas, 2017). In the Turkish *StoryHub*⁵⁰ project, digital stories were created by women on the topics of domestic violence, underage marriage and female infanticide. The most dominant part of the workshop was the story circle, where the women expressed solidarity and belonging towards each other by sharing stories on similar topics and analyzing the causes and consequences of the events (Şimşek, 2017).

DST's supporting process is also relevant in the practice of participatory theater, which is in itself a disciplinary hybrid genre, combining artistic, exploratory, and therapeutic goals. Its primary role, however, is to bring silenced issues to the public's attention through a combination of theatrical-pedagogical, audiovisual, and narrative tools. Alrutz (2013) combined the participatory theater method with DST for a group of neglected young people (i.e., children of prostitutes, drug users and other addicts). In Alrutz's DST workshop, young individuals wrote a text entitled *I come from a place where...* and created digital stories. To gain a deeper understanding of their topic, the young people built interactions with each other while also critically reflecting on themselves and their social situation. The young people created a theater performance of the digital stories, presenting their personal life experiences and group identity in a performative way. They reflected to their relationship with social stereotypes, described their unique situations and showed invisible processes to mainstream society through their meta-narratives.

The aim of community theater is to help young people in search of identity as well as traumatized people to articulate their social situations and raise awareness for social purposes. This was also the aim of Horváth, Oblath, Lanszki, Teszáry, Csozó and Takács' (2017) project *SzívHang*, in which rural Roma women thematized their coping strategies in the context of the Hungarian healthcare system. The DST workshops were complemented by sociodrama sessions. The overall research and creation process resulted in a number of stories from which the narrators, with the help of a dramaturg, director, and scriptwriter, created a stage performance to confront the audience with life narratives that are silenced in mass media or kept silent by individuals due to shame (Horváth et al., 2017). Similarly, the auto-ethnographic documentary theater performance *Long live Regina!*⁵¹ was made up of the narrators' personal digital stories. Life stories were also used in the play *Excellent Workers*⁵², presented at the Örkény Theater, starring people working in the service industry discussing the lack of social appreciation of their work. Such individual life stories may also appear on television, as in the example of the BBC's *Capture Wales* project, which broadcasted digital stories created by individuals in Wales.

⁵⁰ <http://digitalstoryhub.org/>

⁵¹ https://trafo.hu/programok/eljen_soka_regina

⁵² <https://www.orkenyzinhas.hu/hu/musor/kivalo-dolgozok>

CHAPTER 6. NETNOGRAPHY

Netnography is the ethnography of the Internet and examines the content and interactions of posts in micro-communities on Web 2.0 platforms, especially social media and video-sharing platforms. The cultural activities of users in the world of Web 2.0 often take narrative form.

Fehér (2015) describes digital identity as the projection of the self through digital platforms, claiming that such an identity is nothing more than a data set. In her research, she investigated what motivations and strategies university students (n = 15) have before entering the workforce by constructing their digital identities. Based on the content analysis of the interviews and the results of the questionnaire, Fehér found that 70-80% of the respondents self-identify with their online self-presentation. The survey also revealed that users make decisions based on their roles: women primarily use social media to build relationships, while men use it to achieve their moral goals. Based on the results of the research, Fehér asserts that online and offline identities cannot be separated, as online identities simply represent an attribute of offline identities. A positive self-presentation in a social environment enhances self-esteem, while self-management aids in building a personal brand. While users only make part of their private lives public, the reception of the stories of others is necessary for developing self-reflection. In a later study, Fehér (2019) investigated online decision strategies with a larger international sample (n = 60). 70% of the users consciously shaped their strategies and controlled their digital footprints.

The majority of netnographic research is anthropological and sociological, focusing directly on narrative representations and their impact. The micro-narratives of online self-representation present narrative identity, with users recording major episodes of their life histories on social media. In addition to personal posts, shared content and comments on the content of other users also provide important data regarding an individual's online self-expression. Analyzing this data can reveal a person's views, family relationships and cultural consumption habits. The duration of their online presence or the frequency of posts also represents data that can be used in quantitative research. Relevant elements in social science research include whether users use nicknames or avatars (and if so, which ones) and whether they use filters to aestheticize their visual content or not. Comparing the behavior and identity of users on social media with their behavior and virtual identity in video games also presents a complex research issue.

User-manipulated, often idealized profile representations make research more difficult, as the data presented on the profile does not always reflect the real socio-cultural status of the user. At the same time, users' profile use and activity vary; for instance, highly educated people protect more of their data and they are less reactive to other people's posts. Braga (2021) considers

the digital environment as a natural social medium which allows for the representation of the self and the interaction of users, thus allowing for the study of identity constructs and behavior. Such research poses a major methodological challenge for researchers, but despite its limitations, the ethnographic approach has a number of advantages. The main advantage of ethnographic research is that the data are easily accessible and are not produced for research purposes, but are present in their natural environment. While data mining seems simple, the data noise can be massive – due to factors such as data feeds from artificial intelligence bots – and the researcher has to expend considerable effort on data cleaning. At the same time, the amount of data can vary from minute to minute, so the researcher is forced to set a specific time period for the analysis. The resulting data corpus can be huge and often requires the use of artificial intelligence software to analyze it.

Beyond the data collection, another challenge is the choice of the method used to analyze the data. Netnography, that is, the study of content on the Internet, cannot be considered a research method in itself, as it is always determined by the research paradigm and the research objective that fits the discipline. Sources can be approached from an anthropological paradigm and used to explore cultural content and ritual behavioral patterns. Human behavior can also be investigated from a socio-psychological or even from an economic perspective.

Braga (2021) suggests that face-to-face ethnographic research methods are necessarily adaptable to an online environment. An example is participant observation, which cannot be fully realized due to the time gap between the publication of online content (e.g., writing a post or a comment) and the researcher's reception of it, as the interactions are not taking place in real-time as in the case of face-to-face observation. However, one advantage is that users' online activities can be tracked using the logged data from platforms, which allows the researcher to analyze the data quantitatively. However, statistical correlations calculated from logged data may lead to biased results, as participation in online platforms does not necessarily imply activity.

It can be concluded that content analysis is the ideal research method to analyze the visual, verbal and audiovisual micro-narratives of the Internet. In order to maintain the validity of the research, content analysis should be coded using two independent coders and methodological triangulation should be employed. Braga (2021) suggests the use of face-to-face interviews to complement netnographic content analysis.

Bastiaensens et al. (2019) analyzed a chat stream of 937 chat posts from online forums created by youth workers to support victims of cyberbullying. The interactions were generated in their own natural medium and were not research-related, so data bias was minimal. Participants posted anonymously behind an avatar user profile. The conversation revealed patterns of bullying on online platforms (e.g., blackmail with naked pictures, shaming public posts with pictures and text, or hate speech messages), as well as coping

strategies (e.g., relying on support from family and friends or reaching out to authorities) suggested by youth workers and peers. Users also shared their anxieties and offered emotional support to each other. In contrast, another study by Abidin (2019) identified patterns of abusive behavior on social media through examined comments on posts from six Singaporean influencers over three years, with a focus on the presence of hate speech and aggressive, harassing posts.

In the narratological analysis of Web 2.0 content, the researcher has to consider the post together with its comments as a narrative. The comments on the autobiographical narratives of vulnerable victims (e.g., *#metoo* posts) posted on social media or content-sharing portals present a mixed picture. Asynchronous interaction and facelessness unlock users' inhibitions. In these narratives, the narrator is the protagonist who enters into dialogue with familiar or unfamiliar characters. The antagonist in the narrative is the perpetrator, and the context of the story is clear in the post. The point of view of both the narrator and the users commenting is usually first person. Additional analysis criteria could include the number of likes and the types of emoticons that a post has received.

The researcher can also use media discourse analysis to examine the appearance of news on social media. The evaluation criteria for such content can be: (1) layout and structural organization; (2) objects; (3) actors; (4) language, grammar, and rhetoric; (5) discursive strategies (e.g., manipulation techniques through highlighting and framing; how characters are presented; political coloring; legitimization techniques); and (6) ideological standpoints. In particular, the study of representations of poverty, crime, minority groups, and migration is made more complete when considering these aspects (Horbacauskiene, 2021).

Dörnyei and Mitev (2015) argue that the primary goal of netnography is to better understand the behavior and decision-making mechanisms of online consumer groups. New applications which allow for user interactivity have fundamentally democratized marketing communication, as consumers can directly rate the real characteristics of a product or service on social media or on social platforms. Online rating platforms allow users to give feedback on services using a five-point scale, usually marked with stars, and to give their opinion in narrative which can even be illustrated by photographs. Such data can be accessed by the researcher without direct intervention.

Direct feedback pushes companies to incorporate new aspects into their quality assurance systems, but also leads to higher quality services and products as consumers interact with each other. To analyze consumer behavior, which is sometimes democratic, sometimes intentionally biased, a netnographic approach from the field of cultural anthropology was utilized by Csordás and Markos-Kujbus (2018). In the research, textual and visual content analysis was used to examine user evaluations of a tourist destination. By analyzing consumer narratives, the researchers were able to uncover both

manifest and latent content, which on the one hand represents the richness of information for potential guests, but on the other hand, is also relevant for the decision-making of firms.

The researcher can choose to take the objective perspective of an outsider and avoid learning too much about the internal dynamics of the community. This approach allows for quick access to data. However, in qualitative research, the researcher is sometimes a member of the online study group. In such action research, the researcher explores the online narrative manifestations of members' daily lives. Web 2.0 content, in particular public posts and comments on social media and video-sharing portals, provide researchers with unlimited access to data. As these individuals do not consent to their data being used in research, care must be taken to ensure anonymity and that they are not identifiable. Minors are a particularly vulnerable population. Students and their schools are easily identifiable from the comments and posts quoted verbatim in the study, so direct quotation should be avoided (Green et al., 2019). Autoethnography is achieved when the researcher's subjective experiences (e.g., notes in a diary) also become a source of research data (Dörnyei & Mitev, 2015).

CHAPTER 7. THE IMPACT OF NARRATIVE DIGITAL GAMES ON SKILL DEVELOPMENT

Research on the effects of narrative video games on skill development has not yet been conducted, especially in academic contexts, but until the mid-2010s, there were several studies on such effects in relation to so-called *serious games* designed specifically for teaching-learning purposes. Molnár's (2011) control-group research with first and second-grade students ($n = 100$) showed that context-independent computer games for learning purposes developed students' inductive reasoning. In a systematic literature review, Gómez and Suárez (2021) reviewed English- and Spanish-language quantitative empirical research conducted after 2012 which focused specifically on the use of serious games in higher education. The results revealed that serious games develop students' strategic thinking, group decision-making skills and higher-order thinking abilities. However, the review did not include findings regarding the impact of such games.

Peer norms in video games have a strong influence on adolescents when they play together, especially in regard to aggressive behaviors (Sun & Sun, 2021). The negative impacts of video games are reported in research in which the combination of viewing video game streams and playing video games leads to problematic use (resulting from too much time spent in the game's world) and aggressive behavior, especially for those under the age of 25.

Gupta et al. (2021) investigated whether there is an association between video gaming and the improvement of surgical skills among medical students. It was hypothesized that those with a gaming history would have better eye-hand coordination and visual-spatial skills. In a systematic literature review, all of the 575 participants in 16 studies were active gamers or had participated in activities related to video game skill development. A relationship was found between video gaming and advanced skills in laparoscopic and robotic surgical procedures, but not for bronchoscopic and arthroscopic procedures. In general, decision-making ability was positively affected in all cases (Cabeza-Ramírez et al., 2021).

Graduates are in need of higher-level skills whether they remain in academia or pursue other professional ventures. *Graduate attributes* are a set of skills that includes problem-solving, communication, adaptability, and resourcefulness (Hughes & Barrie, 2010; cf. Barr, 2017). Barr (2017) investigated the developmental impact of video games among university students (n = 100). In this control group experiment, the experimental group played video games for a total of 14 hours in controlled conditions for eight weeks. Six of the eight games allowed for multiplayer-mode and cooperation: two of them were role-playing combat games, two were strategy games, one was a puzzle game and one was a so-called sandbox game, which allowed for unlimited creativity. Of the eight games, two were narrative adventure games in which choices could be made. A validated self-report tool (the Communication Adaptability Scale, Duran, 1992) was used for pre- and post-test measures. The results of the post-test showed significant differences in the cognitive and social domains measured, indicating that the students' communication, adaptive abilities and resourcefulness improved compared to the control group.

CHAPTER 8. RESEARCH ETHICS AND LEGAL ISSUES⁵³

Oral history narratives and digital stories are material that can be easily shared online, helping to promote a topic to a wider audience. However, such videos sometimes contain sensitive personal content and anonymity is often at risk due to the nature of the videos, so ethical issues cannot be ignored.

In oral history research, the narrator must be assured that he or she is the author of the narrative and can also make arrangements for its publicity. Some research teams may refuse to publish oral history narratives on sensitive topics online and may instead archive them in libraries or repositories. In this case, the researcher is only allowed to search the indexed narratives in person.

⁵³ This chapter is a revised version of an earlier paper by the author (Lanszki, 2021).

The degree of publicity of such narratives can vary widely. The *Legacy of Ahmed* project, for example, used oral history to explore the lives of the Muslim community in Britain. In one of the narratives, the female narrator mentioned that she used to drink alcohol, and after the interview, she was so frightened by the material being made public and the resulting potential ostracism that she banned access to the material for 25 years (Niblett & Vickers, 2019).

Leavy (2011) notes that in oral history research, the researcher has to inform the narrators that the researcher is a participant observer and part of the interview process. It is also crucial that narrators are fully informed about how long the process will take and how the publication will take place. The narrators should also be informed about the personal or community (e.g., educational, traditional, or testimonial) benefits that they will derive from the process.

In all participatory narrative research, care should be taken that the researcher does not completely cut off contact with the participants after the research has been completed. In the case of sensitive topics, participants may become re-traumatized and require a psychological follow-up. In particular, the *co-creative* nature of art-based action research raises ethical issues regarding individual creation and participation. In particular, the framework for the storing and processing of sensitive personal data, the (re)use of external resources, and group communication raise ethical and in some cases legal questions.

According to Lanszki and Horváth (2017), the consideration of ethical issues starts at the planning stage of the process, when the facilitator defines the participants and the workshop topic. The authors point out that the selection of group members should exclude people with a psychotic illness or recent experiences of severe trauma unless the program is specifically aimed at them and a psychologist is involved as a co-facilitator. Lanszki and Horváth also emphasize that although the workshop topic may be divisive, it should never be about ethically reprehensible actions and ideas (e.g., animal cruelty, extreme political ideologies, etc.). It is important to lay down the rules of communication at the beginning of the workshop; for example, aesthetic value judgments are forbidden in group sessions. The facilitator's role is cardinal in establishing assertive communication, and participants should be aware that the facilitator moderates the process in case insults arise. The self-reflection of the facilitator is also of utmost importance, as he or she may influence the group dynamics and even the development of the stories if the facilitator's identity, beliefs, and socio-cultural background become too dominant in the communication.

Whether narrative arts-based participatory methods are applied in education or as a research method, it must be taken into account that a central element of the process is that participants actively and repetitively verbalize their own experiences, both orally and in writing, and that they find and revisit old

documents and photos related to the topic. Confronting distressing personal events carries risk factors, as in the process of sorting through memories, the person may be re-traumatized; the trauma may even be more intense due to the distance in time, or the story may traumatize another group member. A workshop on sensitive topics or a workshop with therapeutic purposes should not take place without a psychologist. Ward and Bullivant (2017) point out that the facilitator should make the participants aware that they can stop the process at any time, that they do not have to tell a story just because other group members find it exciting, and that they do not have to fear the judgments of others. The facilitator should also ask the participants to keep the workshop conversations confidential, and to assure the narrators that the finished narrative will not be made public without their consent.

The facilitator should also ask whether the group members are willing to bring up images related to the trauma. If it turns out that they are not, communicate to them that they can use drawings or symbols instead of photos. In the framework discussion, the facilitator should also make group members aware that articulating and speaking up about distressing content can help them to accept it and make the memories part of their identity. The unspoken thoughts and fragments of memories are transformed into a logical whole by the creator during the DST process.

Bán and Nagy (2016) point out that DST can help traumatized group members to gain control over their memories through self-acceptance. This was the case with 12 HIV-positive patients in Zimbabwe who were treated with DST in group therapy. Their task was to capture their most important life events in their digital stories. During group discussions prior to the creative activities, the patients explored the elements that were common to all of their stories. Traumatic elements such as learning about the diagnosis, uncertainty, loss of hope, loss of family members, stigmatization, social discrimination, and loneliness emerged in the participants' stories. Patients felt that the disease had a complete impact on all aspects of their lives. They then looked for points of support and a means to improve their situation: some mentioned support organizations, others the acceptance of family and partners. The method helped them to move away from a negative self-identity, improve their self-esteem and control their negative emotions. Through the formulation of goals and perspectives, group members became aware of their own agency, and their agency was extended to individual and later social acts (Willis et al., 2014). A therapeutic impact was also reported by participants in a Tanzanian DST project involving HIV-positive children, in which the Story Circle was followed by the co-creation of hypothetical future-oriented texts that were acted out and recorded by the children. In an attempt to interpret their stigmatized and marginalized situation from a more optimistic perspective, the children began to plan their futures (Duveskoget al., 2012).

In addition to highlighting the therapeutic effects of DST, the facilitator can also point out to the group members that sharing their digital stories can

help their peers who are in similar situations. Digital stories can also function as educational or preventive aids due to their demonstrative power. Since 2002, the StoryCenter's Silence Speaks program has been publishing digital stories on gender, public health, and human rights issues and disseminating the educational materials produced. The work of *Silence Speaks* groups is often linked to narrative or art therapy. In most cases, the author consents to publish his or her video online. These videos often appear in discussion forums and conferences to encourage social action (Hill, 2008).

Digital stories are the result of a considerable internal work, and often contain sensitive information that the creator is not yet ready to share to a wider audience. It is also possible, particularly in the case of a discriminated group or individual, that the creator may be accused of defamation, so it is always important to consider the scope of publicity of their work.

Overall, the facilitator should follow the ethical principles of qualitative research. Thus, when using DST for autobiographic purposes, the facilitator-researcher should keep in mind the following principles: (1) avoid upsetting participants; (2) participants should be informed in detail about the purpose and process of the research; (3) participation should be voluntary; (4) anonymity should be ensured in regard to publication; and (5) data should not be published without the consent of the participants unless this is the aim of the project (Horváth and Mitev, 2015).

In addition to the research ethics issues, we also need to address the copyright and data protection dilemmas that arise with DST.

Data processing, data protection

The researcher associates personal data with the personal demographic data or with the verbalizable data of the data providers. Beyond this, however, an image or video of an individual is also considered personal data and, if it is included in a digital story, may constitute data processing. It is important to be aware that the General Data Protection Regulation (GDPR) defines personal data as any information relating to an identified or identifiable natural person (Article 4.1 of EU Regulation 2016/679).

The complexities of data processing become simplified when it is made clear who the data controller is and whether there is a professional purpose for the data. If the digital story has been created by someone for their own use and the video is not presented for any educational or another professional purpose, then it is considered private data processing. According to the GDPR, “[...] *this Regulation does not apply to the processing of personal data by a natural person in the course of a purely personal or household-activity and thus with no connection to a professional or commercial activity*” (Recital 18 of Regulation 2016/679 EU).

However, if there is a professional element – in the case of educational or research activities – the data protection rules apply. Processing is defined as any operation involving personal data such as collection, recording, organization, structuring, storage, adaptation or alteration, retrieval, consultation, use and disclosure, or making it available to the public (Article 4.2 of Regulation 2016/679 EU). In the case of research, the data controller is the researcher himself, and in the case of research carried out by a research organization, it is the organization. In the case of education, however, the situation is more complex. Suppose that a student made a digital story about his neighbor's disease for a biology lesson and used the photos, findings, and videos of the person concerned. At first glance, it may seem that the student (or the parent, as we are talking about a minor) is the data controller. We may also assume that since the biology teacher requested the task, he or she is the data controller. However, the question is not that simple. Since the recording is presented in the context of a classroom exercise, its storage, projection and other data processing is carried out by the educational institution. The teacher, as a public employee, is not acting on his or her own behalf, and thus is not the data controller; as it is actually the institution which is carrying out the educational activities.

Complications can be avoided if the researcher-facilitator and/or the educational institution is careful to put an appropriate data protection framework in place before using DST. Data management should comply with data protection principles and rules such as accuracy, purpose limitation, and data minimization. Prior to the process, the participants – and in the case of minors, their parents – should be informed of the data management strategy and their (or their parents') consent to the processing of their data should be sought. At the end of the DST process, participants should be informed of their data protection rights: the rights to information, access, rectification, erasure ('right to be forgotten'), restriction of processing, portability, and objection, and automated decision-making. It is also worth paying particular attention to the fact that, where relevant, DST may also contain personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, health data or personal data concerning the sex life or sexual orientation of natural persons. The processing of such data may be lawful only under very strict conditions.

Copyright and related rights

Copyright issues are a clear issue in the use of DST, as creators use both their own and others' content to create their digital stories. According to Section 9(1) of Act LXXVI of 1999 on Copyright, the author is entitled to all copyrights, both moral and property rights, from the creation of the work. All photographic and video recordings made by a natural person are

protected by copyright if they are of an individual and are original in nature, and therefore copyright rules must be observed whether the creator is in the position of an author or user.

If the creator uses their own content, he or she can indicate on the last slide of the digital story with which Creative Commons (CC) license they authorize further sharing and use. They can also specify whether their own content can be used for commercial purposes, which is partly an area related to property rights. The creator can also decide whether the distribution or broadcasting of his digital story can bring benefit to the distributor. In the context of moral rights, the creator can decide – even under Creative Commons licenses – the extent and conditions of the publication of his digital story, whether or not his name should be mentioned, and whether the integrity of his digital story should be protected.

At the end of the DST process, workshop participants should be offered the opportunity to state to what extent they would like to make their digital story public. The facilitator may offer several options, such as allowing the digital story to only be screened in front of workshop participants or to be used for research purposes; the creator may also choose to use the broadest category of publicity.

The integrity of a work must be protected when the creator does not consent to its use or presentation in a fragmented manner or in contexts other than those originally intended. Article 13 of the Copyright Act (hereinafter ‘the Copyright Act’) states that *“Moral rights of the author are infringed by the distortion, mutilation or any other alteration of or other derogatory action in relation to his work which prejudices the honor or reputation of the author.”* Under copyright protection, the author has the exclusive right to make any use, in any material or non-material form, of the whole or any identifiable part of the work and to authorize each use (§ 16(1)). The exception to this is in cases of so-called free use (§§ 33-41 of the Copyright Act), such as when the author does not indicate with a CC license ‘only non-commercial uses’ (©).

With regard to copyright, Lanszki and Horváth (2017) emphasize that the facilitator should always inform participants that the copyright of the images and music used in digital stories and the privacy rights of the persons in the images must be taken into account by the creator. In the event of any legal dispute, the creator must take responsibility for any improper use and the facilitator cannot be held liable. If an educational institution publishes a digital story of its pupils on its website or social media platform, the school itself is using the copyrighted work – by making it available to the public – unless there is a case of free use. It is therefore of the utmost importance to raise awareness of the appropriate procedure when using the works of others.

The correct procedure is for the creator to refer to the music or images from external sources on the last slide of the digital story, indicating the exact details of the sources (author, title, host work/journal and, if available, the year of creation).

Chapter IV of the Copyright Act deals extensively with cases of fair use. These include quotation (Art. § 34 (1)), copying (Art. 34 (2)) and adaptation of a work for educational purposes (Art. Section 34(4)), but in all three cases, it is required to give credit to the author or licensor.

In the classroom, it is not yet automatic to expect pupils to produce completely legal material. To prevent copyright complications it is best to include open-source and public-domain images, music or video content in digital stories. There are many libraries and educational databases whose content is freely accessible and usable as part of cultural heritage. A good example is the *Digital Storytelling Festival* competition run by Europeana and The HeritageLab, where anyone can submit a digital story without paying a registration fee. In order to participate, the digital story must include at least one open-source work from a database made available to any cultural institution in the world. Another important condition for participation is that external sources must be acknowledged in the video. The third condition for participation in the competition is that the creators must indicate which CC license they wish to claim for their video.

The legal aspects of DST also include the issue of personal rights regulated by Act V of 2013 on the Civil Code, in particular, the right to image and sound recording, which requires the consent of the person in the image or sound recording – except in the case of a mass recording or a recording of a public performance (Civil Code, Art. 2:48 (2), (2)). To ensure that personal rights are respected, the creator is required to obtain the consent of the person concerned when recording a person's image or voice.

It can be concluded that planning is a key element of the DST method. The preparatory phase should establish the privacy rules for the process. Informational materials, declarations, and agreements have to be prepared so that the facilitator can provide them to participants or, in the case of minors, to their parents before and after the process. Bán and Nagy (2016) mention among their introductory objectives the clarification of copyright issues and the future use of the videos. Before the DST workshop, participants should also be informed about the rules of group communication and participation. After the workshop, participants should sign a copyright and disclosure statement (Bán and Nagy, 2016, p. 80), which can be supplemented by a data management statement for both education and research. This ensures that participants feel safe at the workshop and have an understanding regarding the use of their digital story.

As part of the planning process, the facilitator should inform the participants about the possibility of searching for copyrighted content and using Creative Commons licenses, as well as the requirements and conventions for referencing, before the creation phases (i.e., writing, creating and searching for images, searching for background music, and editing).

Part IV.

Storytelling and Learning in the 21st Century

Learning through narratives is a fundamental mode of human thought (Bruner, 1986), as selecting the most relevant elements from a myriad of information, putting them in causal order, and presenting a conclusion are the keys to easier comprehension, interpretation, and storage. Narrative structures have contributed to knowledge transfer in various forms, media, and functions throughout human history. Drawing on Aebli's (1951) theory, Nahalka (2004) reviews the changes in pedagogical paradigms of information transfer in chronological order. He distinguishes between the knowledge transfer didactics of antiquity and the Middle Ages, the pedagogy of demonstration that flourished in the age of empiricism, the pedagogy of action at the turn of the century, and the dominant pedagogical paradigm of today, pedagogical constructivism.

The main form of knowledge transfer in ancient pedagogy was oral transmission through learning texts verbatim and then recalling them. The stories of local groups, as well as tales and sagas, were passed on by oral tradition. Homer's epics and the Bible also survived through the learning and transmission of complete texts. Pre-processed knowledge, organized in a narrative pattern, was transmitted through interpersonal communication and language. Knowledge transfer by memorization was a dominant paradigm not only in antiquity but also in the Middle Ages, and this form of oral transmission is still used today in organized education.

However, the didactics of Comenius (1658) introduced a breakthrough, as illustrative images appeared alongside verbal content in educational practice. Comenius (1657) was impressed by the basic ideas of the age of empiricism, and considered experience through the senses, primarily observation, to be the primary means of learning. In his pedagogy, Comenius put objects and iconic content at the service of students' cognition.

At the turn of the 20th century, a new paradigm, the pedagogy of action, emerged as part of reform pedagogy alongside the oral transmission of knowledge and demonstration. Dewey's views introduced a learner-centered, experiential pedagogical approach to education based on collaboration, reflective dialogue, and co-creation. The learning process aimed to involve students actively through their curiosity and playfulness. The engagement was believed to be increased if the student experienced an interest in the learning

outcome and felt that his or her energy had not been invested in learning in vain. The basic idea of Dewey's pedagogy was that learners should take an open and responsible approach to their own social interactions and creative activities by evaluating their own learning processes. Communication and discussion about experiences was seen as a key prerequisite for learning (Dewey, 1933, 1938). This activity-based pedagogical approach, based on students' agency, is also reflected in the complex narrative processes that are being implemented with digital tools in the 21st century.

The most recent pedagogical paradigm is the constructivist theory of learning, which sees learning not as the reception of knowledge from objective reality through verbal, visual or tactile tools, but as an internal construction of knowledge in which the student incorporates new elements into his or her existing knowledge system (Nahalka, 2002). However, the major learning theory paradigms are not mutually exclusive. Narrative patterns of cultural transmission can be found both in the oral dialectical discourses of antiquity and in the pictorial and verbal representations stored in external memory devices after the invention of writing systems (*Figure 9*).

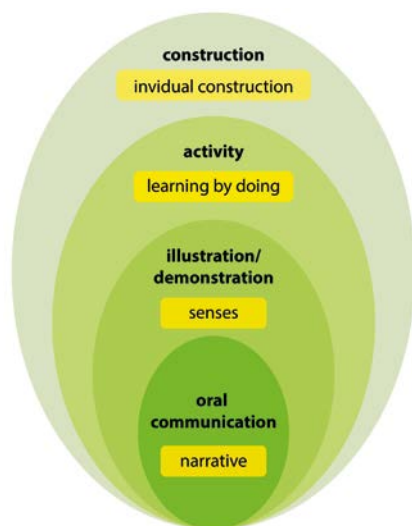


Figure 9. DST and the pedagogical paradigms (Lanszki, 2018, p. 33)

Based on a historical overview of pedagogical views, it is clear that the idea of top-down transmission of unchanged information is less and less prevalent in conceptions of learning, as the paradigm of democratic and individualistic knowledge construction based on experience is becoming increasingly dominant. The activities of the actors in the learning process have also changed. Students are becoming more and more active and involved in the learning process, and the role of today's teacher is not the owner and transferor of knowledge, but a mentor and facilitator of the learning process who creates the optimal environment for learning.

The transformation of pedagogical processes has also been supported by the digital innovations of the millennium. Digitalization has expanded the scope of informal and formal education, making resources more easily accessible from digital databases, providing unlimited visual and audiovisual content for demonstration, and enabling creative student engagement and online collaboration through the use of apps and smart devices.

As the changed teaching-learning environment requires teachers to develop complex planning and strategies, the integration of ICT tools in education is fraught with pitfalls. One of the most typical problems is that a significant number of teachers still only consider the formal educational setting when organizing the teaching-learning process, and either exclude digital tool-related activities from the learning process or limit the use of ICT in the classroom. The other extreme is when teachers use digital tools in their teaching without critical reflection, embedding them in methods that are not linked to any learning-teaching objectives (Molnár et al., 2019). According to Buda (2017), the biggest problem is that although educators are open to learning new methods, they know few strategies that they can use to incorporate ICT tools into classroom activities organically.

The solution is for educators to design pedagogical processes that make sense of the narrative mode of knowledge transfer and their students' use of digital tools in an integrated learning environment. The functions of digital tools in the teaching-learning process have been complexly modeled by Komenczi (2004) in his diagram below (*Figure 10*), which can be used to characterize the learning environment to the creation of digital narratives.

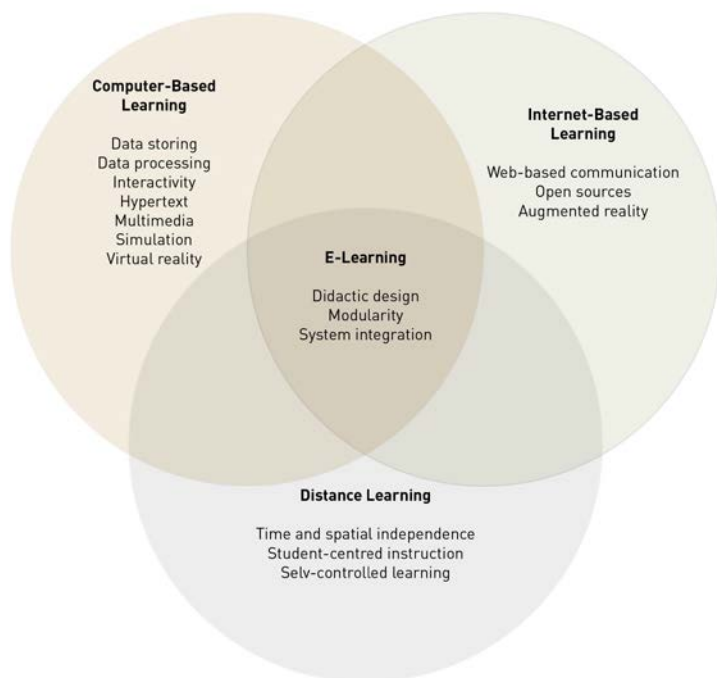


Figure 10. Components of e-learning (Komenczi, 2004. p. 32)

The Internet and the digital environment provide an interactive information and communication platform throughout the narrative creation process. Digital tools connected to the web can be used to store and edit data, as well as to communicate and collaborate. The creation of digital narratives requires the use of physical hardware devices (such as smartphones or desktop computers) as well as offline and online software environments. To create a narrative, students conduct source research, selecting their sources from hypertext and multimedia information environments stored on desktop computers or cloud-based repositories. The information is processed and the verbal, visual or audiovisual narrative is edited using a software. These creative activities can be carried out independently of contact hours on a personal time schedule. The online environment allows the creative process to be accompanied by interactive online communication between students and narratives are also able to be publicized through online sharing. The essence of teaching and learning through ICT. Education can only be achieved through precise planning of steps and tools, in which the instructor must follow the principles of modularity, sequentiality and integration of digital systems.

Komenczi (2013) does not view the e-learning environment as a substitute for traditional learning environments but as a new learning environment complemented by electronic tools specific to the information society. In the case of digital narrative creation, it is also not possible to separate learning activities in the formal learning environment from those that take place online.

The contact learning environment is complemented by a networked learning environment, whether through institutional devices or students' mobile devices, and the whole process can be supported by the institution's online learning management system (LMS) or virtual environment (e.g., *Second Life*).

Digital technology allows for the creation of an integrated learning environment where technology is adapted to face-to-face, contact classroom activities. The objectives of classroom communication, information sharing, and creative work can be accompanied by digital tools and the appropriate use of the Internet to optimize learning outcomes. The effectiveness of learning in an integrated learning environment also depends on student and teacher choices, the degree of interactivity of the learning community, the quality and quantity of activities, and the degree of student involvement rather than on the medium and tools used. True engagement can be achieved through activity-centered instruction designed with consistent pedagogical planning and implementation (Ollé, 2015).

Students in the 21st century use the Internet on digital devices, an easily accessible but unquantifiable and not necessarily reliable source of data and information. Students are no longer limited to physically accessing information offline in a formal learning environment but now have the possibility to extend their learning environment infinitely through the possibilities offered by the Internet, their desktop computers and the set of applications on their smart devices (Ollé, 2017). The learning environment extended in this way is characterized by its functions as a database, an operation executor, and an interactive interface; as it provides unlimited access to delocalized content in different media formats, it also performs organizational, mathematical and editing functions, and provides a channel for virtual collaboration and communication (Komenczi, 2013).

Such an approach is a shift from the traditional view of teachers' monopoly of knowledge. In the pre-Internet era, traditional education relied on teachers', textbooks' and libraries' reliable but limited knowledge, whereas today, the web provides students with access to a wealth of resources. Textbooks, teacher narratives, online hypertexts, images and multimedia content can all be considered as sources of narrative information. Students have unlimited access to information of highly heterogeneous quality. It is, therefore, the teacher who remains the professional reference point for knowledge, and who guides students in their search for relevant and reliable sources on the Internet. The teacher's role is more important than ever, as he or she mentors and provides feedback on students' digital content selection and production, as well as their online social communication, while at the same time helping them to organize content.

In an activity-based integrated learning environment, interactive collaboration requires that all actors in the teaching-learning process are familiar with the functions of digital tools and media as well as their potential and limitations; it is also important that their online and offline communication

is characterized by an effective, assertive and ethical approach. Technology-integrated teaching and learning, therefore, presuppose certain teacher and student competencies, access to technology and a high level of tool use. In order to facilitate teacher planning, a number of models and concepts have emerged. In the following chapters, those models are presented which can connect to teaching and learning through storytelling and digital technology.

However, before reviewing the models, we will situate narrative creation using digital tools within the framework of two approaches based on recent theories of learning, constructivism, and connectivism, and summarize the results of empirical research that has investigated the impact of digital narrative creation.

CHAPTER 1. DIGITAL FORMS OF STORYTELLING IN THE LIGHT OF CONSTRUCTIVIST AND CONNECTIVIST LEARNING THEORIES

Traditional and new learning strategies can coexist and do not need to be mutually exclusive. Many aspects of teaching, such as the prior knowledge of learners, heterogeneity of the learning group, the purpose of teaching, the content of the curriculum and the digital infrastructure, have a major influence on what strategies a teacher adopts. Oral knowledge transfer, as well as the illustrative presentation and creation of visual, verbal, and audiovisual narratives have their place in the classroom. However, the creation of digital narratives can most relevantly be interpreted by the approaches of constructivism and connectivism.

Construction means the building of something and the putting together of parts. Even the general meaning of the word has a dual significance in terms of the creation of digital narratives, as it means both the construction of a narrative structure from various elements and the active shaping of the narrative with digital tools. Papert (1993) used the term construction as a synonym for creation, mainly in a didactic context, specifically in the context of tool use. The essence of *constructionism*, in Papert's sense, is that learners construct and develop their creative knowledge by creating and using elements rather than by following the teacher's instructions.

Kőfalvi (2006) contrasted the constructivist learning environment with the traditional learning environment. He characterized the latter approach as having the teacher fulfilling the role of an active knowledge mediator at the center of the teaching-learning process, while the students' task is passive reception, memorization, and reconstruction of primary knowledge. In contrast, Kőfalvi viewed constructivist learning as a shift in the roles of teacher and student, implying a relationship in which the teacher is the organizer of knowledge acquisition while the students themselves organize the knowledge content. Thus, cognitivist constructivism is a model of learning

that breaks with the knowledge transfer approach of previous paradigms: it posits knowledge as an individual construction rather than a reflection of the objective world (Nahalka, 2002).

According to the constructivist view, pedagogical management is the task of pedagogical communities, consisting of students, teacher(s), and family members. The process of creating narratives through digital tools can be understood in terms of the epistemological principles of constructivism, as it takes place within a community in which knowledge is not transmitted in a top-down manner from teacher to student but in a more democratic, horizontal process. It is not the teacher who transfers the knowledge vertically, but the students construct knowledge within the subject. The dominance of the teacher is reduced, placing them in the role of an effective facilitator in the teaching-learning process, managing students' creative and interactive work, as well as their experiential and emotional involvement.

Narratives created with digital tools, be they interactive digital stories, memes, infographics, dashboards, or even digital stories, are artifacts that can be imagined in a constructivist learning environment. The creation of digital narratives can take different forms of learning organization. However, whether these products are produced individually or in small groups, the instructor provides the content and formal framework for students to express themselves creatively.

Methods related to digital narrative construction, especially DST, are processes through which a constructivist learning environment can be implemented in the classroom (Smeda et al., 2014; Lanszki, 2016a). All the characteristics of a constructivist approach to learning can be found in such methods. In the preparatory phase, the instructor explores the students' prior knowledge of the topic: whether they have anchored knowledge elements that can be further enriched with new information or whether a conceptual shift is necessary in case of misconceptions. In addition, the teacher's task is to create a learning environment in which the student's individual, internal, and constructive processes are given room to unfold. In their research, students discover their own sources and put together fragments according to their own internal logic. In order to do this, the students must become acquainted with the interdisciplinary aspects of the topic and then write the text of the narrative, drawing on their personal experiences and opinions based on their prior knowledge and adding new knowledge. Students use the narrative schema to organize the fragments, construct a specific logic based on the principle of causality, and formulate a conclusion based on the narrative arc. The digital narratives are (re)constructions, projections of the cognitive and emotional state of the authors. The videos show which elements of a set of information are considered relevant by each student and the logic that was behind the organizing principle of the narrative was.

The whole creative process is accompanied by an evaluative reference dialogue with the teacher, who, with his or her expertise, is the reference point

for the students' knowledge construction. There is also a continuous exchange of opinions between the group members. One of the main functions of such social interaction is that feedback is used to test the adaptability of concepts since knowledge must be relevant not only in a pedagogical context but also in real-life situations. Students may encounter different interpretations of a topic, different approaches to a problem in the digital stories of the group, and a convention of interpretation of a topic may emerge if the interpretations are linked to each other.

Two concepts arise in the context of constructivist learning theory: constructivism and constructionism: “[...] while constructivism sees the construction of knowledge as a personal process within the individual mind, for constructionism this process takes place in the ‘social cognitive space’, i.e. in the context of cooperation and interaction between people, in the framework of group processes.” (Nahalka, 2002, p. 70) Digital narrative construction lies somewhere at the intersection of the two concepts. The creation of a narrative is seen as an individual construction process according to the concept of constructivism since narratives are related to one's prior knowledge. On the other hand, the construction of digital narratives is the result of research findings and experiences that lead to a unique configuration of knowledge. In addition, the author, based on individual taste, selects the elements (verbal, visual, or dramaturgical) within its own adaptive system. However, constructionism can be seen in the fact that digital narrative creation is a complex process that is reflected not only in the system of tools and objectives, but also in the way in which learning organization and activities are embodied in diverse social forms.

The constructivist pedagogy of collaborative learning through social relations is embodied in Siemens' (2005) *connectivist* theory of learning. The key concept of this model is learning in a networked form, which is not necessarily linked to the school. The concept of networked learning is linked to the notion of a learning environment that has changed as a result of the information revolution. The Internet not only houses information in a networked form but also provides a space for collaborative learning. A summary of the connectivism approach is:

Connectivism's view of learning describes learning as informal, networked, technologically supported, continuous, lifelong, self-organized, embedded in other (non-learning) activities. The basic learning activity is the use of technology and the creation of connections, and the learner's task is to recognize patterns. Learning is a networking activity and the basic skill is to explore the connections between different domains. (Virág, 2014, p. 65)

In order for connectivism to be realized, students and teachers involved in the organization of the learning process must be aware of the possibilities offered by the World Wide Web and the functions that can be put at the service of learning. At the time of Web 1.0, only hyperlinked databases were

available to students, which provided a digital manifestation of the traditional hierarchical knowledge-sharing model. The services of the Web 2.0 turn, which included blogs, wikis, and content-sharing portals, enabled users to shift their roles from passive recipients to active participants and interactively engage in collective networked knowledge construction without any prior IT skills (Forgó, 2009; Hülber, 2012; Virág, 2014). While Web 1.0 contributed to learning by making information accessible, Web 2.0's communication and collaboration interfaces have enabled connectivist knowledge sharing and collaborative creation. Meanwhile, Web 3.0 applications and information environments enable personalized learning (Turcsányi-Szabó, 2011).

All the features of the Internet and the digital tools therein support the creation of narrative structures, individually or in groups. Students adapt to the delocalized and networked learning environment, learning to access and share information as well as organizing the social interactions involved in the process. The interpersonal communication of contact hours is complemented by the interactions of the students with their instrument, their instructor and each other.

CHAPTER 2.

THE IMPACT OF DIGITAL STORYTELLING ON COGNITIVE AND AFFECTIVE LEARNING FACTORS

Web 2.0 applications enable students to be creative and participate in a constructivist or connectivist learning environment. While these integrated learning environments offer students the opportunity to access more resources and engage in more interactions compared to the traditional classroom environment, the success of learning is highly dependent on the student's engagement in learning and self-regulation (Papp-Danka, 2014, 2015). Therefore, an integrated learning environment that promotes effective learning can only be achieved through designing activities that enhance engagement. This requires the teacher to provide structured learning material and enable active personal participation in peer activities (Faragó, 2015). Interactions and collaborative creative tasks increase affective and cognitive engagement; affective engagement in turn increases the willingness to learn, while cognitive engagement enables the use of targeted task-solving strategies. According to Pellas (2014), engagement can be enhanced by developing self-efficacy and self-regulation. An effective way to promote this development is to provide feedback and relevant support for problem solving. The complex methodology of DST allows students to engage in a creative problem-solving process through peer interactions while receiving a range of feedback from peers and teachers in the process.

Empirical research in public education has shown that the use of DST increased engagement in science (Hung, Hwang & Huang, 2012), biology

(Karakoyun & Yapıcı, 2016) and physics (Kotluk & Kocakaya, 2017) classes. The method can also be used for knowledge acquisition, as students using DST scored higher points on knowledge tests in biology and physics (Kotluk & Kocakaya, 2017; Karakoyun & Yapıcı, 2016).

Several studies, also in the context of public education, have reported positive effects of DST on student attention due to its rigid timetable, creative activities with multimedia, and high student engagement (Reyes Torres et al, 2012; Karakoyun and Yapıcı, 2016; Karakoyun and Kuzu, 2016). Emotional involvement and the opportunity for visual communication also had a positive effect on the attention of students with special educational needs (Yusuf et al, 2012; Matos, et al., 2015; Ying et al., 2016), but mathematical problem-solving with DST also improved the attention of preschool children (Preradovic et al., 2016). High school students presented mathematical problems in real-world contexts in their digital stories and remained focused and consistent throughout the process (Gould & Schmidt, 2010).

Using a narrative schema supports deeper storage and easier retrieval of content. DST is an activity-oriented, narrative content organizing technique that facilitates deep learning (Sadik, 2008; Xu et al, 2011). The image processing stage of DST and the visualization of the product have a positive effect on visual memory, while the text writing stage serves to store the product in long-term memory (Sarica & Usluel, 2016). At the same time, the creation and reception of digital stories also support a deeper embedding of content due to the multisensory nature of the process (Matos et al., 2015).

DST is an excellent tool for content organization because it helps to fuse knowledge elements into a logical unit (Robin, 2008; Hung et al, 2012). Contextualized learning allows information to be anchored to categories, which not only aids in deep learning but also facilitates retrieval (Bandi-Rao & Sepp, 2014). Deep learning also occurs due to the fact that content (re) construction is a creative process in which the creator articulates theoretical knowledge in his or her own language. According to Ohler (2013), storytelling is also useful in the educational process because it is facilitated by the emotional effects that the story evokes.

In an examination of primary school students (n = 2900), Di Blas and Paolini (2013) found that DST helps students to sustain their attention and deepen their understanding of content through the systematic storage of information. In the Italian local knowledge initiative *PoliCultura*, the students interviewed at least one professional, and one family member and visited at least one local cultural institution during the collection of material. A further condition for participation was that the whole project had to be created collaboratively at the class level by groups of students in both formal and informal learning environments. The students were given free access to a self-developed online framework (1001 Stories), which included a template for the structure of the text and allowed them to upload the videos they had produced. Their teachers found that the topics they had worked on through

DST were better retained and easier to recall from memory. Teachers attributed the positive effects on cognitive skills to several factors, which were: (1) the exploration of the environment was not done randomly but according to steps they had planned in advance; (2) students interviewed a family member or expert in a targeted way, focusing on elements that fit into their digital story and listening actively to the interviewees; (3) students paid attention to the quality of the elaboration and worked in a planned way. Teachers also considered the impact that DST had on students' emotional factors, which provide significant support to their cognitive functioning. Students' motivation and interest in the subject matter increased as well as their social and communication skills; digital literacy also improved significantly during the process (Di Blas & Paolini, 2013).

Sadik (2008) found similar results in his action research. He found that DST helped to develop intrinsic motivation in students, who were driven a desire to engage in the creative experience. During the process of DST the students had a flow experience characterized by concentrated immersion and exclusion of the outside world. Xu et al. (2011) also confirmed that the flow experience can be enhanced if the entire creative process takes place in a virtual environment.

The motivation and engagement with the subject matter which arises through the use of DST has been observed across several age groups. In an experiment by Preradovic et al. (2016), 6-7-year-old Croatian pre-school children developed basic mathematical skills over the period of one year using storytelling. The members of the experimental group worked with the DST method, which involved searching for materials online, arranging images in *Prezi*, and then recording their voices. The control group prepared mathematical presentations using physical tools, printed postcards, and glue. The results showed that the complexity of the DST approach had a positive effect on the motivation of the students in the experimental group and also on their attention, computational and mathematical skills. Similar results were obtained in a Taiwanese control group experiment (n = 117), in which the effect of DST was tested in a science class. The motivation of the experimental group was significantly higher, and a positive change was also observed in the attitudes of the fifth-grade students toward learning the subject (Hung et al, 2012). A similar relationship between students' motivation, attitudes toward the subject and learning achievement was found by Kotluk and Kocakaya (2017): Turkish upper secondary school students tried DST in a physics class, a subject which students generally did not enjoy as much as others. After the subject post-test, the students performed significantly better compared to the control group and their own subject pre-tests.

In another study, pre-matriculation students (n = 110) used DST to make films on specific topics in English as foreign language lessons. Their motivation and interest in the subject increased and they considered DST to be important and useful by the end of the process. The experimental group performed

better on the subject knowledge test than the control group. In addition, the DST students scored higher results on tests of self-efficacy and motivation (Yang & Wu, 2012).

Ng and Nicholas (2015) include components of self-efficacy in their framework of competencies for the teaching profession. Self-efficacious teachers are seen as those who view themselves as competent and confident, and believe that they can control pedagogical situations. In Heo's (2009) study, the self-efficacy of 98 pre-service teachers toward using digital tools for teaching (i.e., their feeling able to use ICT tools appropriately and adequately in the classroom) increased significantly after they were introduced to DST (Heo, 2009). DST was also used to increase students' conceptual self-efficacy. In Yang and Wu's (2012) and Campbell's (2012) experiments, and Kotluk and Kocakaya (2017) used DST to increase students' self-efficacy in the physics classroom.

Student motivation was also very high in the previously mentioned Italian *PoliCultura* project. The reasons for this, according to Di Blas and Paolini (2013), were (1) the publicity given by the national initiative, (2) the competitive environment and (3) the collaborative work. Smeda et al. (2014) observed lower and upper-grade students in five different subject areas in an Australian school and conducted interviews with their teachers. They found that students showed different levels of enthusiasm at different stages of DST. They were least enthusiastic about storyboarding and most enthusiastic about presenting the digital stories. However, motivation was particularly high when it came to students' group and inter-group collaboration in terms of technological and grammatical problem solving, and in sharing digital stories online and connecting with other network groups. It was found that the cooperative activities of DST provided a strong emotional and motivational background for learners throughout the process (Smeda et al., 2014).

The relationship between self-confidence and motivation was further investigated in a study carried out in a primary school class. Four of the 26 pupils in the experiment, aged 9-10, had special educational needs, and five were non-native speakers of English. The student population was heterogeneous in terms of socio-economic status. The students explored the theme of antiquity, and the phases were divided into one session per week for four weeks. According to the findings of the experiment, the students effectively used the tablets in groups while interacting with each other. Their high level of motivation was evident from their autonomous learning choices, such as downloading editing software to their smart devices at home which they used later on in the project. All students, especially those who had language and/or learning difficulties at school, reported a particular sense of achievement and pride at the end of the process. According to the teacher who participated in the experiment, the method had a clear positive impact on students' text production skills, as even students who had previously been too shy to communicate in the classroom were able to express themselves

(Cooper, 2016). Similarly, Canadian students (n = 24) in grades 5-6 showed a significant increase in self-confidence during sessions involving collaborative work and technology use, which had a positive impact on various other learning processes (Campbell, 2012).

DST was also shown to help overcome the shyness of Thai students (n = 50) who found it very difficult to speak English and therefore had previously struggled to develop their speaking skills in their language classes. In their digital story, they were able to express themselves freely, and after seeing each other's films, they began to talk about the films with more courage and confidence. The students worked on the topic independently and had the vocabulary to discuss the related topics. Their self-confidence and, in turn, their motivation showed a clear increase (Somdee & Suppasetsee, 2007).

The abilities to analyze, contextualize and categorize new knowledge are fundamental to the learning process. The evaluative and analytical dialogues that accompany the DST process provide learners with the capability to discuss and analyze their resources as well as the work of themselves and others. Integrating DST into learning processes also helps to develop analytical skills (Cole, Street & Felt, 2013; Karakoyun and Yapıcı, 2016).

CHAPTER 3.

DIGITAL STORYTELLING AND BLOOM'S TAXONOMY

The complexity of digital narrative construction can also be modeled by Bloom's Taxonomy (1956), which describes the target system for teaching-learning in terms of cognitive, affective and psychomotor development. Bloom has assigned operational domains to the teaching-learning objectives that are hierarchically interrelated. 'Remembering' is the lowest level, followed by 'understanding', then 'applying', 'analyzing', and 'evaluating'; at the top of the pyramid is 'creating'. The taxonomy has been modified several times, with each iteration thematizing the learning objectives in the context of the traditional school learning environment. Turcsányi-Szabó (2012) interpreted Bloom's taxonomy in the context of a teaching and learning environment supported by digital tools based on Anderson et al.'s modified model (2001). She rationalized the learning activities based on the extended and revised versions of Bloom's taxonomy (*Figure 11*). The hierarchy of the use of digital tools is clearly outlined in the system of activities assigned to students' actions.

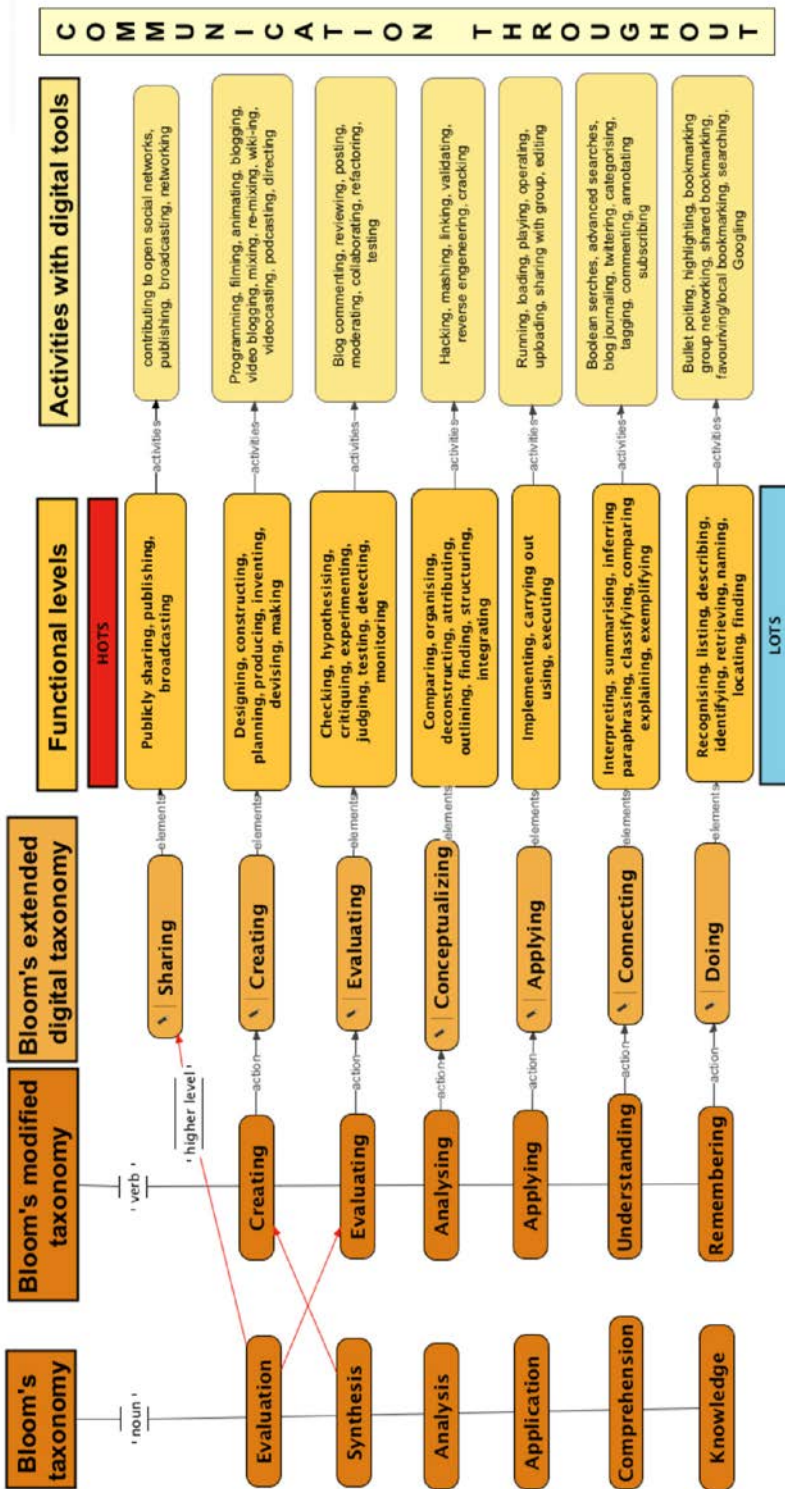


Figure 11. Bloom's extended taxonomy (Turcsányi-Szabó, 2012)

Concerning DST, at the lowest levels of the hierarchy of learning activities with digital tools are information retrieval, organization, and networking, followed by pragmatic activities, and at the highest levels are creation with digital tools and evaluation. The process of digital narrative construction, in particular, the DST process, realizes the full spectrum of the six cognitive levels of operation found in Turcsányi-Szabó extended digital Bloom's taxonomy, complemented at the top level by the activity of public sharing (Figure 12).

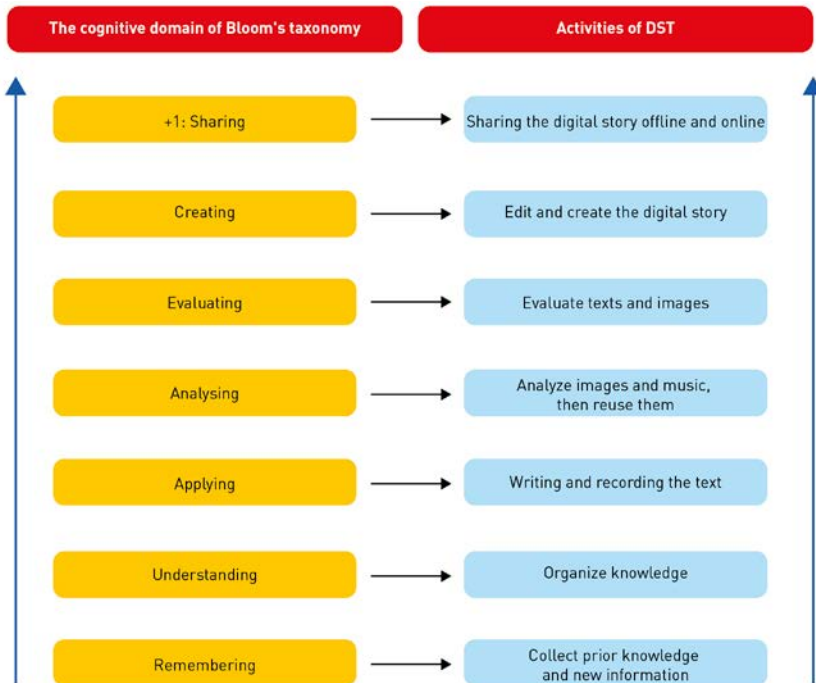


Figure 12. The cognitive domain of the digital Bloom's taxonomy, according to Turcsányi-Szabó (2012) and the cognitive activities of DST (Lanszki, 2018, p. 79)

During the process, the student recalls prior knowledge of the topic and then searches for new information in different media formats. He or she then selects all the data and structures it logically according to the narrative. In the creative phase, the student creates a written and then audio version of the text and produces the accompanying images. Next, students evaluate their own work as well as that of their peers and finalize their digital stories. At the top level, the products are shared offline or online.

The hierarchical system of Bloom's Taxonomy is also represented in the Digital Citizenship 2013 model (Ollé et al., 2013). The affective levels adapted to the model can be observed in autobiographical digital stories (Figure 13).

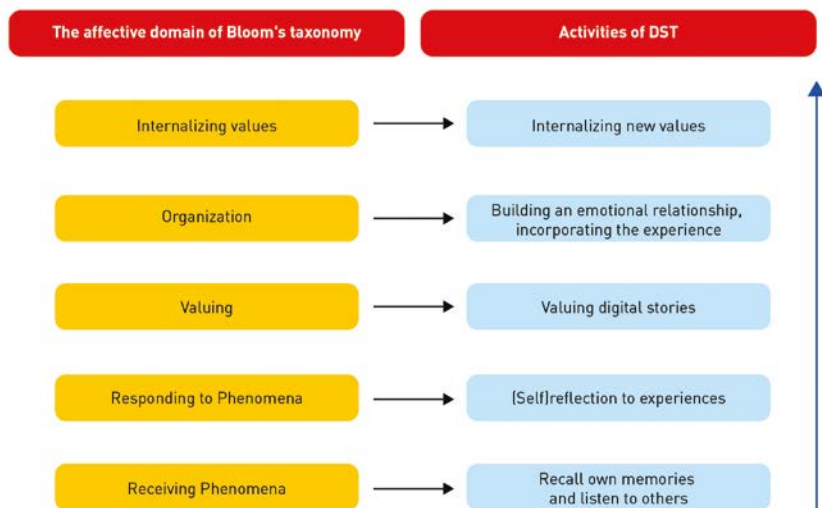


Figure 13. The affective domain of Bloom's taxonomy according to Krathwohl et al. (1973), Ollé et al. (2013) and the affective activities of DST (Lanszki, 2018, p. 80)

Students recall their own memories in relation to a topic and establish a context between themselves and the topic. Related experiences are then shared between peers to create a shared context between narratives. At the end of the process, the students evaluate each other's digital stories as well as the process, and the values that have been formulated as group norms are incorporated into the individual behavior of the students.

The psychomotor components of Bloom's taxonomy can also be found in DST activities (Figure 14, based on Bredács' modified model, 2015).

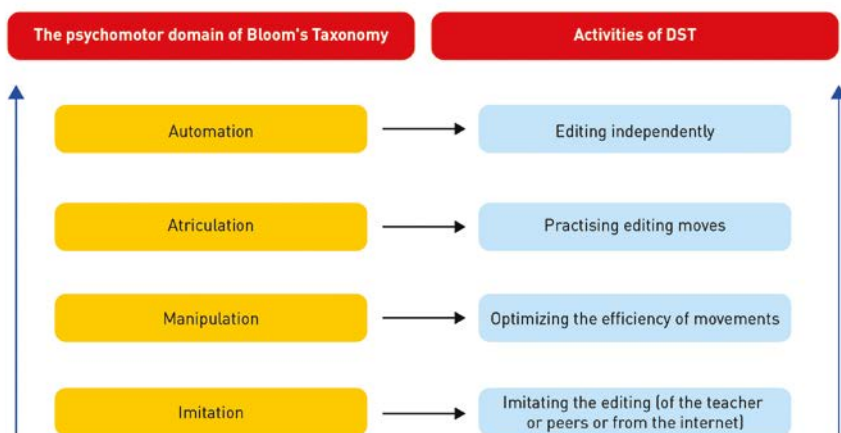


Figure 14. The psychomotor domain of Bloom's taxonomy, according to Krathwohl et al. (1973), cf. Bredács (2015) and the activities of DST (cf. Lanszki, 2018, p. 80)

The psychomotor domain of the taxonomy can be linked to the use of digital tools, including editing activities. The digital editing operations are first copied by the students, who then develop optimal manual sequences of operations, which are then practiced until the practices become automatic.

CHAPTER 4. DIGITAL STORYTELLING AND THE TPCK MODEL

The digital Bloom's taxonomy has been used to describe student activities in DST creation. The question then arises as to what skills and knowledge the instructor needs to facilitate this complex process. A prerequisite for the creation of any digital narrative is that the instructor is knowledgeable in the use of the necessary tools in the hardware and software environment. Hülber (2015) highlights that the implementation of any innovative pedagogical strategy requires the instructor to take on a guiding and facilitating role in the background, which calls for a change in approach and methodological development. The instructor should not focus his or her effort on the direct transmission of information when designing the process but on the preparation, management, and evaluation of student activities and the incorporation of techniques for developing group dynamics.

Mishra and Koehler (2006) created a set model of the competencies expected of 21st-century educators. Since today's educators need to take the specificities of the integrated learning environment into account in addition to their own pedagogical-methodological and subject knowledge, the authors added a technology component to Shulmann's (1987) PCK (pedagogical-content-knowledge) model. The ideal mix of teacher competencies and activities is found at the intersection of the three areas. The ideal educator, as shown in *Figure 15*, brings professional content into the classroom using rich methodology supported by appropriate technology.

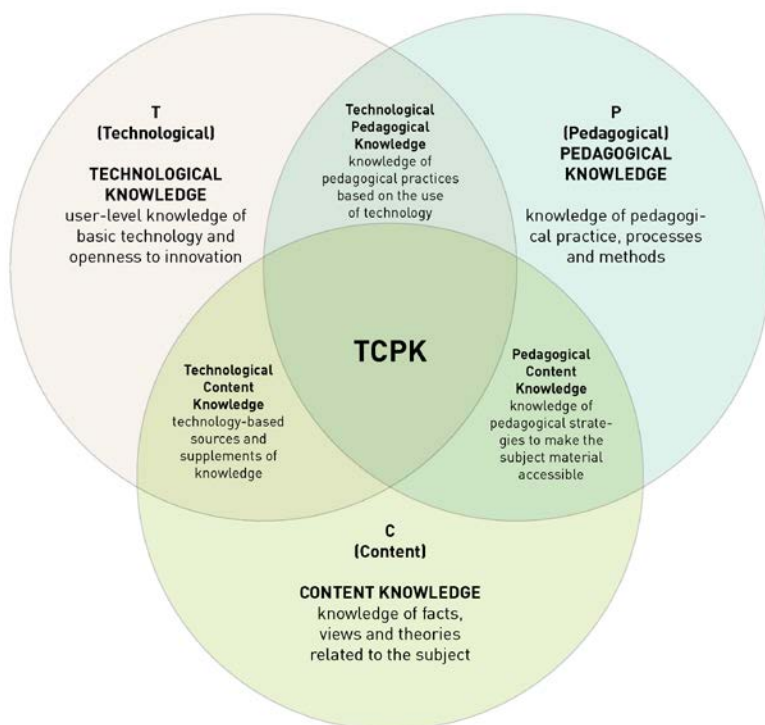


Figure 15. TPACK Model according to Mishra and Koehler (2006, p. 1025), cf. Lanszki (2018, p. 49)

The TPACK model can also be applied to higher education. The technological competence (T) of the educator is understood to mean a user-level knowledge of standard technological tools (both hardware and software) and an openness to the constantly evolving and changing innovations in educational technology. Pedagogical skills (P) can be interpreted as methodological knowledge or knowledge of instructional design, referring to the teacher's capability to plan pedagogical processes and to subordinate teaching-learning activities to pedagogical objectives, taking into account the composition and needs of the learning group. The instructor should have a rich and varied methodological repertoire, being familiar with several forms of learning organization. Content knowledge (C) refers to the knowledge of the instructor in his or her field of specialization, including knowledge of current theories and views. At the intersection of technological knowledge and pedagogical knowledge, we find the instructor's ability and willingness to innovate in order to support pedagogical situations technologically. At the intersection of pedagogical and content knowledge is the ability to select the appropriate strategy for the given content. The combination of technological and content knowledge means that the instructor is able to appropriately select digital content that illustrates the learning material (e.g., maps, diagrams, simulations, or online resources).

Maddin (2011) and Bandi-Rao and Sepp (2014) used the TPCK model to interpret the skills required of an instructor who uses the DST approach in his or her lessons. As part of their teacher training, student teachers produced digital stories, which the researchers evaluated according to three broad categories based on the TPCK model.

(T), knowledge of the use of technology:

- the teacher is familiar with a wide range of technological tools for DST;
- the teacher knows how to use both hardware and software easily, appropriately and purposefully to create a digital story;
- if the teacher cannot solve a specific technological problem, he or she can organize appropriate assistance.

(P), pedagogical skills:

- how clear the pedagogical goal is;
- how structured the timetable is;
- how clear the evaluation system he or she has developed is;
- what forms of learning organization have been used to achieve learner collaboration (offline and online);
- how supportive the teacher's facilitation is and how constructive his or her communication is.

(C), content knowledge based on the digital story:

- degree of proficiency in the topic;
- level of conceptualization skills;
- level of language accuracy;
- richness of vocabulary;
- the structure and logic of the narrative (Bandi-Rao and Sepp, 2014).

The TPCK model can therefore be used to fully describe the teaching background needed by an instructor who wants to use DST in his or her lessons. Technological knowledge (T) is the knowledge of software and applications that are necessary for digital content management. Instructors must be familiar with image, sound, and video editing software, as well as scanning, voice recording and camera applications for smartphones. They should also know how to store, send, download, upload, and convert files to other file formats (*Figure 16*).

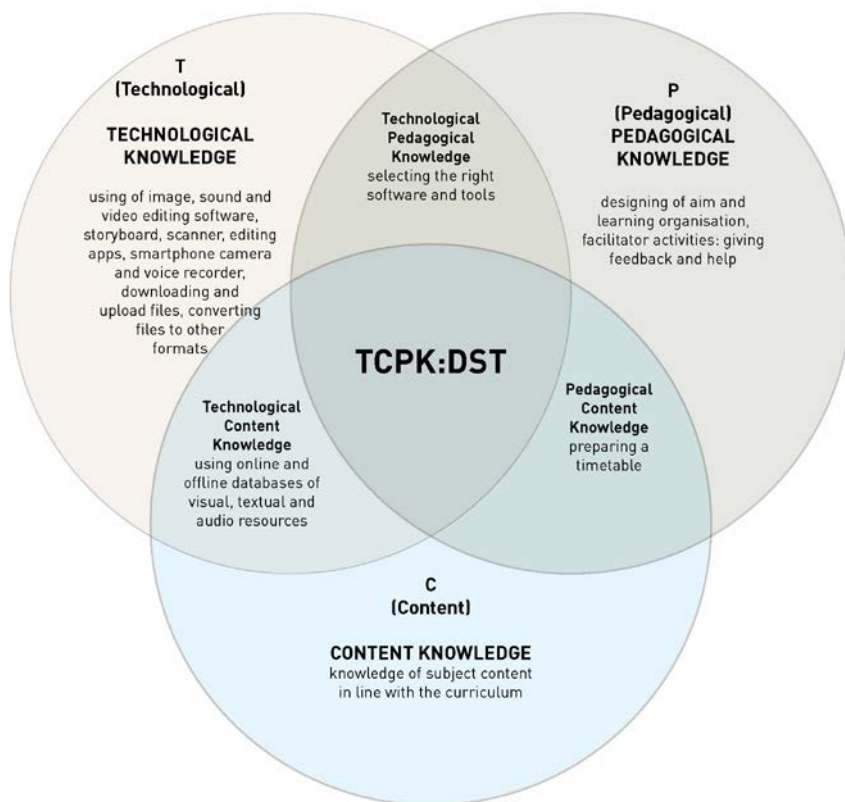


Figure 16. Teacher competencies needed to implement DST based on Mishra and Koehler's (2006) TPCCK model (cf. Lanszki, 2018, p. 51)

The pedagogical knowledge (P) required to incorporate DST into the teaching-learning process includes planning and facilitating the necessary steps, developing the assessment process and criteria, and developing the learning organization. Content knowledge (C) involves the selection and in-depth knowledge of the content in line with the course objectives. At the intersection of technological (T) and content knowledge (C) are the image, audio and video resources that require access to digital databases, whether online or offline. At the intersection of (T) and (P) is technological-pedagogical knowledge, which in the case of DST refers to the selection of tools from the set of digital tools provided by the institution and in possession of students. And the intersection of (P) and (C) is illustrated in the placement of DST steps in a thematic plan. The middle of the model, representing the common intersection of the three sets, is the complex process of DST.

CHAPTER 5.

THE CREATION OF DIGITAL NARRATIVES ACCORDING TO THE SAMR AND PICRAT MODELS

Digital narrative creation in integrated learning environments can be captured in a complex way using the SAMR and PICRAT models. The SAMR model describes the different levels of technology integration (Puentedura, 2006). Digital tools can be used to substitute or augment a physical tool and can be used to modify or redefine the learning and teaching process. Tóth-Mózer and Misley (2019) illustrated the four levels through tasks related to a compulsory school reading, *Egri csillagok (The Stars of Eger)* (Figure 17).

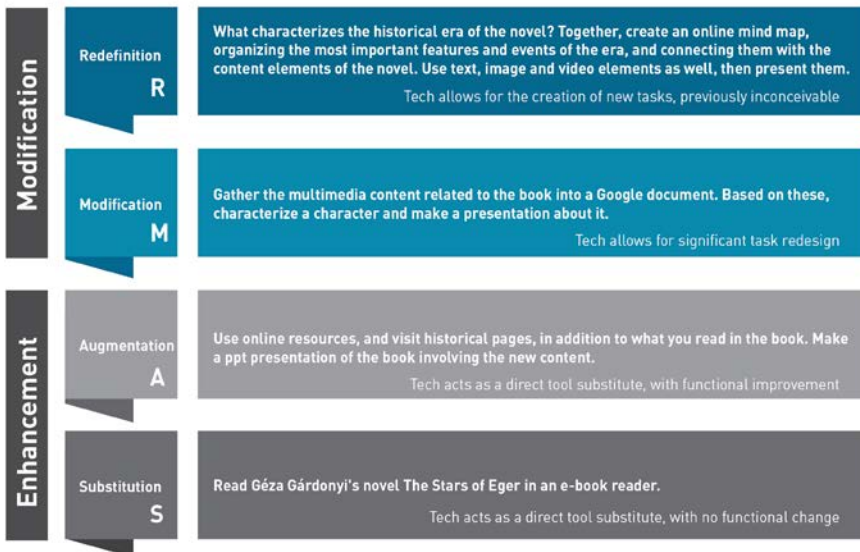


Figure 17. The processing of Géza Gárdonyi's *The Stars of Eger* based on the SAMR model (according to Tóth-Mózer & Misley, 2019, p. 156)

The figure shows that at the level of substitution, the same text only appears as cross-media content on a different platform. In the augmentation, the student is active but could just as easily create a summary of the content in a notebook as he or she could with a digital tool. A higher level of online source research and organization of the novel is achieved by modification, a process in which students reconstruct the story using multiple media. At the level of reinterpretation, the students create a digital narrative with their peers which also constitutes a group interpretation. In higher education, the model is interpreted at the level of substitution and augmentation, where the instructor places a video recording of his or her lecture and the associated assignments in the university's LMS – in this case, the integration of technology replaces the physical medium and allows for easier access and interpretation. A significant improvement in the quality of the assignments can be achieved at the level of

modification, where the instructor asks students to summarize and organize different transmedia adaptations of the content. Reinterpretation can be illustrated in students' synthesis, reuse, and reinterpretation of content related to a topic in a modular way with a specific logic using digital tools.

The SAMR model has been further extended with elements representing levels of students' digital tool usage (*Figure 18*), which can be passive, interactive, and creative. The teacher's usage of digital tools is reduced to three levels: replace, amplify and transform. This model is named PICRAT (Kimmons et al., 2020) after the first letters of the English terms. In the new model, the integration of technology can be represented in a two-dimensional matrix.

C CREATIVE I INTERACTIVE P PASSIVE	STUDENT'S RELATIONSHIP TO TECH IS	CR	CA	CT
		IR	IA	IT
		PR	PA	PT
		TEACHER'S USE OF TECH	TRADITIONAL PRACTICE	
		REPLACES	AMPLIFIES	TRANSFORMS
		R	A	T

Figure 18. The PICRAT matrix based on Kimmons (2016)
(Rausch & Pásztor, 2021)

Students use technology in a passive way when they are simply receiving (i.e., reading, watching, or listening to) the narrative through digital media. Passivity is transformed into interactivity when peer-to-peer task solving or individual exploration through interactive interfaces becomes part of the learning process, such as when students participate in digital games or solve problems through tests or puzzles. Other examples include students collaboration in online escape rooms by solving problems or participating in interactive multi-platform strategy video games. The highest level, the

creative level, is reached when the student uses digital tools to create artifacts (e.g., infographics or digital stories).

Regarding the instructor, the first level of digital tool integration entails replacing methods of face-to-face instruction with digital tools, as in the example of digital word cards to support student concept use or recording a video lecture using a conferencing application. However, a higher level of student problem-solving can be achieved by amplifying when the instructor designs activities not suited for the traditional classroom through the use of digital tools, as in the case of a teacher asking students to solve problems in a collaborative document. In many cases, a complete change of pedagogical approach is required for the instructor to implement complex pedagogical strategies in an integrated learning environment.

Since the matrix is an effective way to visualize the differentiated technology use patterns of student and teacher activities, it can also be used in reference to the integration of digital narratives (*Figure 19*). At the lowest level of application, the passive-replacement level, an instructor might deliver a lecture as a *Power Point* presentation, which is passively received by the students.

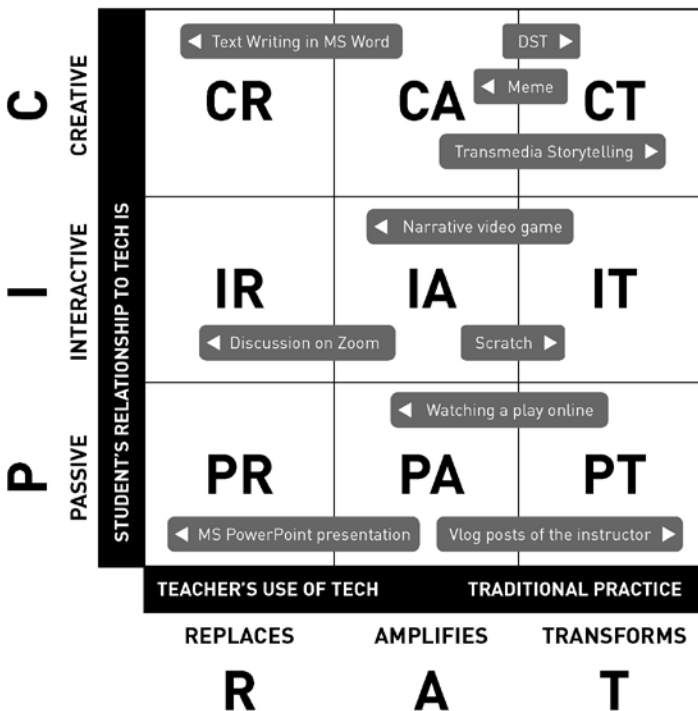


Figure 19. Digital narratives in the PICRAT matrix, based on Kimmons et al. (2020)

An example of the instructor using amplification is the presentation of an external narrative not specifically produced for educational purposes

(e.g., a play) using digital tools, or when the instructor transforms his or her practice through the creation of vlog posts. However, neither of these activities involves interactive learning among students. Active involvement occurs when the instructor uses, for example, the discussion function on the *Zoom* platform; however, this still represents only the lowest level of instructor application (replacement), as this activity can also be conducted without digital tools. However, narrative video games cannot be replaced by offline tools, so when instructors integrate them into a lesson, they amplify their practice. A transformation of teaching practice occurs in the example when students are asked to write a story using programming software (such as *Scratch*) in a narrative framework.

The creation of digital narratives is fully realized when students are involved in creative activities. The teacher simply substitutes a sheet of paper when asking students to write texts using Microsoft Word, and amplifies the practice when asking students to create a meme. However, instructors considerably modify their teaching and methodological habits and engage with the highest level of narrative construction through the use of DST. Kalogeras (2021) linked narratives of the Bible across various media into an edutainment project with the help of students; through this practice, a holistic yet critical and creative approach of to teaching-learning emerged. The students creatively integrated transmedia storytelling into their learning process, as the biblical stories are found in a variety of narrative forms (e.g., iconic representations such as works on canvas, glass, walls, as well as in narratives such as psalms, films, and comic books), which they linked together according to their own logic.

Interactive digital narratives can be integrated into education at both IT and CT levels. When creating MOOCs or course materials for distance learning, instructors can make their lectures interactive by embedding short quizzes, polls or discussions using software such as *Panopto*, *Woodlap* or *PlayPosit*. The instructor can also create an online breakout room for his students in *Genially*: videos, infographics and quizzes can be integrated into the templates to create dynamic and responsive content. Instructors can make interactive student activities more creative by asking students to edit a sequentially structured scenario or algorithmic model with a branching structure. Organizing content on an online platform (e.g., using *Twine*) is a simpler and more visual digital implementation of an activity that can be done on paper.

CHAPTER 6. DIGCOMPEDU, ISTE, 21ST CENTURY SKILLS, AND DIGITAL NARRATIVE CREATION

Since the turn of the millennium, students have been required to develop new skills that enable them to be active in the information society in addition to expanding their knowledge and developing their basic skills. Meeting the

needs of the labor market in the new millennium requires a redefinition of the curricular objectives of the education system as a whole. The *Partnership for 21st Century Skills* (P21) focuses on the development of skills which are still linked to the core knowledge and skills of traditional education but which are also adapted to new needs. Thus, efforts toward the development of information and media literacy and the use of digital tools have emerged, and efforts toward developing 4C skills (i.e., communication, creativity, critical thinking, and cooperation) also play an important role of the teaching of learning and innovation skills (Trilling & Fadel, 2009).

These skill areas can be successfully developed through the creation of digital narratives as students engage in the creative process of learning by doing, actively synthesizing knowledge, and solving problems. The whole process of storytelling with digital tools is accompanied by active discussion and evaluation with peers and the instructor (Abdolmanafi-Rokni and Quarajeh, 2014; Lanszki, 2015a), which can also take place online.

The process involved in the creation of the most typical types of digital narrative, the digital story, contributes to the development of all four of the previously mentioned C's. The impact of DST on the development of 21st-century skills has also been the subject of numerous studies (Kotluk & Kocakaya, 2017; Malita & Martin, 2010; Thang et al., 2014).

Ohler (2013) saw digital storytelling as an effective way to develop critical thinking and creativity simultaneously, and coined the term *creatic thinking*. The creation of multimedia narratives takes place simultaneously at the level of the learning community and the individual, and therefore this hybrid construction can be understood as a specific form of cooperative creation or co-creation (Parsons et al., 2015; Lanszki, 2021). Creation occurs through students' development of their individual products, and cooperation is present in the reflective and evaluative interactions that the learning group contributes to the final narrative.

Schmoelz (2018) investigated two levels of co-creativity through the contact learning interactions of DST (n = 125). The first level involved text writing and the exchange of experiences and information. At the second level, the video editing phase, which was experiential yet controlled by rational guidelines, a shared flow experience was achieved.

According to Bereczki (2016), the main features of creativity are that "[...] (1) it is generated through individual and group processes, (2) it results in products that are both original and appropriate, and that (3) creativity is influenced by a myriad of personal and environmental factors." (Bereczki, 2016, p. 7) The conceptual matrix of creativity is also relevant to the creation of digital stories and other digital narratives, as (1) the product is created through research, creative processes, and community interactions; (2) the narratives themselves are unique verbal, visual or audiovisual representations of their creators and, as they can include curricular content, they are not only interesting for the learning community but also useful and informative; (3)

the students' knowledge of the use of the relevant tools and environmental factors such as time, classroom, and technical equipment all influence the quality of the videos (Lanszki, 2019).

Previous research has shown that creativity can be developed through the creation of digital narratives. Gresham (2014) conducted an action research study on the impact of DST on the creativity of seventh-grade students ($n = 22$) in a blended learning environment. An online learning platform provided opportunities for collaboration, the expression of reflections on each other's work, and peer assessment. Questionnaire-based attitudinal and observational data as well as information from students' learning diaries showed that DST improved students' problem-solving skills and their ability to focus on tasks, as well as their risk-taking, flexibility, cooperation and responsibility. Coppi (2016) measured the development of the creativity of 11-year-old students ($n = 14$) through a pre- and post-test using the Torrance Test of Creative Thinking (TTCT). He found no significant differences in fluidity, flexibility and originality, although positive changes were suggested by the pupils' metacognitive reports. In a control group study ($n = 100$), Yilmaz and Goktas (2017) compared the effects of traditional storytelling and storytelling in augmented reality. The study demonstrated that there were significant increases in scores for narrative skills, story length and creativity for the participants that worked in the augmented digital environments.

Lanszki (2019) explored teachers' views on how to develop student creativity by analyzing the content of case studies of teachers using DST ($n = 14$). The teachers were able to take interpersonal communication, student collaboration, and individual problem-solving to a higher level, and they were also able to develop their students' critical and flexible thinking skills.

The P21 framework covers the key competencies of students in the 21st century, and the *Digital Competence Framework for Educators* (DigCompEdu), published by the European Union, thematizes the key competencies that teachers need for the labor market. A teacher in the information society must have the core competency to effectively communicate and collaborate digitally with colleagues within the organization and to be constantly trained in the applications required for their practice. Competencies required for teachers also include the abilities to search, modify, and share digital content, as well as to use the tools of online collaboration, learning support and evaluation. The teacher should develop students' information, and media literacies and problem-solving skills in addition to supporting online collaboration and creative processes (Redecker, 2017; Dringó-Horváth et al., 2020).

The practice of receiving and composing narratives in an integrated learning environment can also be interpreted through the use of a large framework. Such competency frameworks have been developed by *The International Society for Technology in Education* (ISTE) for teachers, students, and education leaders. ISTE's frameworks for educators and students focus on the competencies related to teaching and learning that can be supported by

the use of digital technology. The model presents the competency areas for a 21st-century educator in a standard matrix. Based on this framework, the instructor continuously develops the skills needed to support students by participating in professional networks and learning about the latest research findings in education; in addition, as a student group leader, he or she provides free access to digital tools and communicates ideas about the use of digital tools to decision-makers. At the same time, the educator is a digital citizen who supports students in their critical, responsible, and ethical online activities and develops their digital and media literacies. The instructor is involved in the whole learning process and plans the use of digital tools that support active and deep learning. In addition, the instructor also chooses the appropriate digital tools to facilitate creative processes and measurement evaluation (Crompton, 2017). To create digital narratives, the instructor requires all ISTE competencies for educators, as communication, assessment, and often creation are also realized through collaborative platforms that the instructor needs to navigate. At the same time, it is important to draw students' attention to the ethical and critical selection of resources, but also to the ways in which content can be ethically shared in digital products and what copyright and privacy aspects should be considered when publishing a digital artifact online (Lanszki, 2021).

The ISTE student competency list (Brooks-Young, 2017) fully covers all the skills needed to create digital narratives. Students are actively involved in the whole process as they make decisions and collaborate while using digital platforms. In addition, students should be familiar with the rules of ethical data use and secure data storage. It is also important to be able to develop their own research strategies based on their plans regarding the design and creation of their products. In doing so, they learn how to communicate creatively with the outside world and their peers and how to engage in further online collaborations.

Numerous empirical studies have demonstrated that the development of these competencies can be realized in complex digital narrative processes such as DST. It encourages the development of 21st-century skills such as information literacy, media literacy and visual literacy, and also encourages students and teachers to express their views. DST also develops research, word processing, organizing, presentation, and problem-solving skills. The positive effects of DST on performance and problem-solving ability have been proven by the results of several studies (Yang and Wu, 2012; Xu et al., 2011; Hung, et al., 2012).

During the learning process, the student determines the pace of his or her individual creative work, which can contribute to the development of effective, independent learning strategies and the development of social skills (Lanszki, 2016a). In a study focusing on the public education context, ninth-graders positively perceived the opportunities for learner autonomy realized through active learning during DST (Lanszki & Papp-Danka, 2017). Sadik (2008) also considered that the main advantage of DST is that creators are

able to actively organize their knowledge while expressing their opinions, and Dörner et al. (2002) emphasized that both the creators and recipients of digital stories are active, as a recipient is also a co-author for the storyteller, participating constructively in shaping the narration of his fellow students.

Yuksel et al., (2010) gathered data from 173 educators from around the world regarding the skills DST developed in their students based on their past experiences. Forty-five percent of teachers responded that the method supported the acquisition of the curriculum and improved students' skills related to writing, using technology, and using presentation tools. 35% of educators reported that students developed their ability to research, plan, synthesize, and analyze, and also showed improved time management habits and the development of a critical approach to seeking out resources. Teachers also reported the development of a number of other learning competencies, highlighting the development of reflective and advanced skills as well as social skills.

The DST approach supports students' collaboration within and between groups to solve problems and perform organizational tasks. Discussing digital stories develops students skills related to questioning and self-expression (Reyes Torres et al., 2012; Smeda et al. , 2014; Grant & Bolin, 2016). Through these interactions, students systematize their thoughts more effectively and ask more critical questions. DST is also an effective way to refine reasoning skills, as it encourages students to learn constructive criticism. To break the silence after screening digital stories, Bandi-Rao and Sepp (2014) encouraged group members to use the following opening phrases in formulating their critique: "If I were you, I would change that...", "I feel a little more / less...". Students had to learn not to take the criticism of their peers as a personal insult but to develop an intention to improve. Robin (2006) identifies problem-sensitive questioning, assertive communication, and the practice of constructive criticism as the main positive benefits of DST.

Communication with peers, the organization of tasks, and the collision of opinions which take place in the DST process have a positive effect on students' ability to solve problems cooperatively (Smeda et al., 2014), and the collaborative nature of knowledge organization also improves the ability to solve problems (Hung et al. 2012; Gould & Schmidt, 2010; Preradovic et al., 2016). A powerful digital story can provide an answer to a problem while imparting a personal touch (Janurikné Soltész, 2017) and help students to use their theoretical knowledge to formulate their research problems (Rambe and Mlambo, 2014).

DST also has a positive effect on cognitive skills that are important in the labor market, such as problem sensitivity, situational awareness, creativity, time management, and goal-oriented resource management (Suwardy et al., 2013). Time management becomes a more conscious process by following the steps of DST (Bandi-Rao & Sepp, 2014), and students become able to learn independently: a key to lifelong learning (Smeda et al., 2014; Robin, 2008).

CHAPTER 7.

MOOCS AND STORYTELLING

Storytelling can take place not only in an integrated learning environment, but also in an independent open educational course. *Massive Open Online Courses* (MOOCs) are a special form of distance learning in which a course organized by a reputable institution becomes available to the masses via the Internet. The aim of the initiative is to make knowledge accessible to the widest possible public audience, with Internet access being the only condition necessary for joining such courses. Applying for these courses is possible from other cities and countries, and the curriculum is published on a weekly basis and accessible from home while sitting in front of a computer. Such courses present a great opportunity for those with reduced mobility who, due to their location, are unable to attend traditional, offline courses. The democratic nature of MOOCs is further exemplified by the fact that anyone interested can enroll for free, regardless of their qualifications or financial situation. The number of participants is also not limited, so there may be thousands applying for a particular MOOC.

Siemens (2012) distinguishes between two types of MOOCs: xMOOCs (eXtended MOOCs) and cMOOCs (community / connectivist MOOCs). Reflecting a more traditional, methodologically conservative approach, xMOOCs are online, asynchronous implementations of existing university courses. The content shared with participants at regular intervals is mainly lectures and video tutorials, and examination is carried out through online tests. Although participants of xMOOCs form a vast collective virtual learning community, fellow students are not really able to interact with each other while taking a course. The emphasis is placed on managing individual progress and content acquisition rather than engaging in a cooperative form of learning. Participants do not come into direct contact with either their instructor or their peers during the process.

Coursera regularly offers a DST xMOOC led by two professors at the University of Houston: Bernard R. Robin and Sara G. McNeil.⁵⁴ The language of the five-week course is English, and attending the course requires 3-4 hours a week. The primary target groups for Robin and McNeil's course are educators. In the course, participants receive links to explanatory video tutorials, relevant digital stories, and explanatory texts and are able to create their own digital stories by the end of the course.

The steps involved in the learning process are strictly based on StoryCenter's model. In the first week of the course, students gain a general understanding of DST methodology and define the purpose and topic of their story. In the videos from the second week, participants can learn about the rules of text writing, selecting and creating images and infographics, as well as storyboard

⁵⁴ <https://www.coursera.org/course/digitalstorytelling>

and Creative Commons licenses. In the third week, voiceover recording and video editing skills are brought into focus. In the last week, participants learn about publishing a digital story online and eventually share and discuss their experiences about DST.

The detailed course description is not public and can only be read after registration. The background material for the course is on Robin's website along with other pieces of useful information useful for students. The website provides a detailed list of Web 2.0 tools and channels for the method (e.g., blogs, podcasts, wikis, and apps), as well as a collection of digital stories that can be searched based on thematic categories. The website also aids in the planning of the teaching-learning process, summarizing assessment criteria, copyright knowledge, and presenting e-books and guides on the method.

Videos and texts can be viewed during the course, but there is also a discussion forum and the opportunity to work in pairs, with participants being able to receive feedback on their individual performance. The members of the learning community do the coursework individually, and co-thinking only takes place in the fifth week. However, the feedback is continuous as the curriculum also includes quiz questions, and participants receive individual assessment of their subtasks from week to week.

In addition to traditional content-organized courses, more interactive forms of MOOCs have emerged that support personal contact with the course leader, with the learning process based more on the communication between students. cMOOCs reflect a connectivist learning model and implement a creative, cooperative and interactive approach in the learning community. Educators make themselves more available and regular task sharing among students is a common practice. As facilitators, they are responsible for students who are experiencing difficulties in the course, and provide advice and public reflection on coursework in addition to moderating comments. Instead of publishing and retrieving pre-compiled content at a single point in time, the focus of such courses is on producing and combining content. Facilitators connect participants to other students, encouraging the shared construction of knowledge together in a cooperative way through problem-solving tasks. This dynamic form of community learning allows for creative collaboration beyond the reception of written, audio and audiovisual content. Such MOOCs take advantage of a variety of online platforms, such as learning support frameworks, online virtual classrooms on the *Second Life* platform, blogs, and social media interfaces. During the process, students can publish their partial learning outcomes which they receive from their peers, who also share their work with others. In cMOOCs, students also have the opportunity to become better acquainted with one another and learn about the community.

The DST course offered by *Coursera* is just in one of many; however, the project entitled *ds106* builds all of its cMOOCs on a single DST-concept.⁵⁵

⁵⁵ <http://ds106.us/>

The first open course was launched in January 2011 by Jim Groom at Mary Washington University (Levine, 2013). The course flexibly interprets the concept of DST within the broad framework of interpretation defined by Handler Miller (2004/2020), and all of the included narrations are created with digital tools. During the first two years of the course, 620 blogs and 23,000 external posts related to *ds106* activities were published, and 800 people posted at least one piece of content related to the MOOC on a social media platform.

The courses do not feature a central framework for publication, but each student shares their content on their own web interfaces. The *ds106* website has the names of the platforms that are suitable for participating in the courses (e.g., WordPress, Blogger, and Tumblr), and the students' discussion forum is a public Twitter channel marked with *#ds106* so that participants can receive feedback, even from strangers. The digital narrative-making course launched at Mary Washington University is open for external participants, so it is not so much a university course as it is a joint activity of an extended connectivist learning community. Moreover, the connection is not time-bound: external participants can enter the learning community and leave it whenever they want without obligation.

Levine (2013) summarizes how *ds106* differs from other MOOCs: (1) There are no lessons, with teachers instead publishing a mix of reading, video, or creative assignments on a weekly basis; (2) It is not possible to miss out on the learning process by skipping a lesson, and it is even conceivable that a student can simply be involved in learning a certain subtask; (3) The enrolled student and the participant in open education do not have the same learning experience, as the latter develops their own learning paths; (4) The word 'massive' in the case of *ds106* means efficiency rather than the number of participants, with external participants contributing to the work of internal students; (5) The course does not offer a certification, only the experience of competence; (6) Access to the course material is not required to register; and (7) Individual narrative-making processes.

An important prerequisite for taking part in the *ds106* course is to be involved, at least minimally, in the culture of participation manifested through social media and blogging. In the first two weeks at the online *boot camp*, students will have the opportunity to warm up by learning how to blog and create their accounts; in this phase, students also create the online image, or avatar that will represent them throughout the course. On Twitter, the student selects who will be their helper and by sending him or her a welcome message and following the account. Students also learn how to use cloud-based content sharing (image sharing: Flickr, audio sharing: Soundcloud, video sharing: Youtube via a Google Account) as they have to complete many tasks in pairs or groups. Students must create tags on their blogs indicating the following categories: images, design, audio, video, web, and remix. In addition, learners are tasked with uploading a weekly video to *The Daily Create*, as well as a weekly self-reflection on the tasks and experiences in the form of a blog post.

If students need help, they will find answers to their questions in the collection of tutorials and resources provided by the interface. The thematic classification of the posts, the so-called *Assignments Bank*, contains the posts of the (former) participants; it is the participant's responsibility to publish two new posts in this category by the end of the course.

The course announced by the university covers one semester. The participants never meet the lead instructor(s) offline during the course, but the communication between fellow students and the teacher(s) takes place through various online channels. If there is a risk of a participant dropping out, the instructors will contact the student at the halfway point. In addition, every Tuesday, at 5:00 pm the students can participate in a so-called *internet show* where they can discuss their problems and reflect on each other's creations.

In the fall semester of the 2015/2016 academic year, Paul Bond and Jim Groom launched a thematic *ds106* course that explored the specifics of the horror genre through DST. The instructors regularly posted weekly assignments on the common website in video form, delivering instructions to the students through an engaging style of dialogue. For shorter weekly products, students must regularly include a professional reflection on their own blog. During the course, students read and recommended horror stories as well as literature on the genre and created scary stories with horror characters. As students also learned about the film language of the horror genre, they continuously analyzed the formal characteristics of the films they watched and took part in photography exercises.⁵⁶ Students were also tasked with creating an audio play that featured scary sound effects using *Audacity*, *SoundCloud* and *Freesound*. The film editing module also included two subtasks: students had to remix and mashup a film.

To complete the course, students were also asked to produce longer narratives in a variety of formats, with mandatory assignments including a podcast, two video tutorials, and a digital story in the horror genre. Students had three weeks to create the final video product, an extravaganza.

The whole process was based on the active participation and creativity of the students, who had mastered the storytelling conventions of horror. By the end of the course, they had learned to edit images, audio, and video. An additional benefit of the course was that constructive participatory behaviors on social interfaces as well as an active, meaningful, and cooperative online presence became automated for students. Horror as a topic and DST as a methodological framework provided a valuable opportunity to learn a variety of narrative strategies and develop a culture of responsible, critical, and active online behavior.⁵⁷

⁵⁶ Photographic assignments collected by John Johnston under the name *photoblitzer*: <http://johnjohnston.info/photoblitzer/>

⁵⁷ <https://ds106.us/history/>

Part V.

Digital Media and Storytelling in University Courses

The structure and content of university courses are determined by the outcomes required by the institutions, but instructors have autonomy in the implementation. However, the methodology of university courses in Hungary is still characterized by frontal instruction, lectures, demonstration, discussion, and explanation due to the fact that knowledge has to be delivered to a large number of students in a relatively short period of time. However, as opposed to the top-down and instructor-centered transfer of knowledge, student-centered methods that include modern ICT tools should be implemented in higher education instead (Ollé, 2010). According to the recommendations of the OECD, higher education should equip students with a wide range of skills to meet the challenges of a knowledge-based and ever-changing society and encourage lifelong learning. In line with this goal, higher education methodologies should be enriched with problem-based, competence-developing methods that improve students' critical thinking, creativity, and communication skills in addition to subject-based learning (Hoidn & Kärkkäinen, 2014).

There has been a marked increase in effective teaching practices at higher education institutions, and more and more universities are sharing their innovative teaching practices. These are available in an open source higher education methodology database which can be found on the Tempus Public Foundation website since 2017.⁵⁸ The ICT Research Center of the Károli Gáspár University of the Reformed Church has prepared an educational informatics handbook specifically for the development of higher education methodologies (Dringó-Horváth et al., 2020).

Various forms of storytelling are increasingly being used as independent or supplementary teaching methods in higher education courses (Kubinger-Pillmann, 2022). The primary aim of this integration is to explore personal and professional identity (Lanszki, 2016c, Moss, 2017) and to develop generic soft skills such as critical thinking, communication and interprofessional collaboration (Jamissen & Moulton, 2017). In addition, digital forms of storytelling can be adapted to educational outcome requirements and subsequent professional profiles.

⁵⁸ <https://tka.hu/nemzetkozi/9770/felsookatas-modszertani-adatbazis>

The following chapters focus on how storytelling and the use of digital tools can be subordinated to the objectives in different fields of higher education. The types of digital narratives listed in the second part of the book are compact verbal, visual or audiovisual (re)presentations with a linear or branching structure. In higher education, these narratives can be used as tools for illustration, but their most effective application is when students themselves create digital narratives. Such work is important not only because of the experience gained through the use of digital tools and the professionally relevant content of the created product but also because of the collaboration and interpersonal communication involved in its production, which also supports the development of various competencies. Whether students are creating memes, dashboards, infographics, interactive digital narratives or digital stories, the process requires them to select, communicate, interpret and use ICT tools in an appropriate and purposeful way.

CHAPTER 1. BUSINESS STUDIES

Storytelling techniques are relevant in marketing and market research contexts on several levels. On the one hand, companies build their brand from their clients' product-related narratives, which they use as a basis for further visual, verbal or audiovisual promotional narratives. In business, narratives are also used in the development of organizational culture and in the analysis of macro-level economic processes.

When developing organizational culture, it is important to assess the experiences and needs of employees through their stories. Musacchio Adoriso (2009) examined the internal and external narratives that emerged within a micro-community. The research found that the everyday events which occurred at the workplace were framed by bank employees in a narrative structure (i.e., chronologically and causally). The researcher conducted narrative interviews with the bank managers ($n = 14$), recording metacommunicative signs and collecting data from the local history museum, the bank's brochures and its website. A full background narrative of the company emerged from the data, the story of the acquisition of a family-owned bank, which was further subdivided into sub-narratives. The local Fargo myth associated with the bank emerged in the narratives in addition to the clichés regarding big and small banks, as well as the family stories that shaped the collective memory and workplace identity of the employees. The researcher also revealed a complex picture of the logic of bank decision-making and problem-solving, which was characterized by operationalized cost-effectiveness.

Exploring an organization's characteristic narratives is a source for image building and a tool for developing organizational identity. Employee narratives outline the extent to which they are loyal, their ability to identify with the

current values of the company, and their critical reflections. In an ideal organization, employees collectively shape the identity of the firm instead of being controlled by the board (Moss, 2017). The use of DST can contribute to the creation of this common identity. In Koh's experiment, the use of DST fostered self-confidence in employees who rarely talked about themselves. At the same time, business employees learned how to communicate meaningfully and effectively in a narrative structure. DST has also been used in workshops in Singapore in the areas of brand dissemination and the improvement of *elevator pitch* speeches (Koh, 2017).

Companies not only promote their products in a narrative structure for outside sales but also aim to influence decision makers and investors. Narrative structure helps to convey the point through synthesis, supporting verbal information with music or images. The use of data-driven storytelling is an effective tool for presenting market research findings, and business students would greatly benefit from incorporating this complex form of data visualization into their training. At the same time, learning the rhetorical turns of narrative can also be useful for future business professionals. Including narratives in presentations, analyses and research reports is not only persuasive, but also increases audience engagement and encourages purchase.

In such a narrative, the context of the story is the current state of the market, which determines the storyworld. The narrative can reveal demographic profiles and transport trends of well-defined groups of characters whose relationships to each other can be depicted episodically; the narrative can then be brought to a close with a complex conclusion. The protagonist is the client, the consumer, whose best friend is the service or product, while the antagonist is the challenge which the product or service helps to overcome (John, 2022).

The structure of external promotions is informed by market research, the primary aim of which is to assess the target groups' attitudes and value preferences toward services and products. In the first stage of brand design, researchers use narrative interviews to uncover consumer stories and experiences that influence customers to purchase a product or service. The interviewees also reveal their purchasing motivations and the meanings that they attribute to the product. Based on these interviews, further advertising narratives are created that are perceived as authentic by consumers, and thus facilitate their identification with the product (Andreasen, 1985, Mick & Buhl, 1992; cf. Mitev, 2015).

In *storytelling marketing*, narratives are used to present common sense or nostalgic experiences related to a brand or product. A storytelling promotion can be an entire narrative (e.g., when a housewife tries a variety of washing powders but none of them wash her clothes to her satisfaction except the advertised product), or it can be based on a single scene in which a mood is associated with a product (e.g., an advertisement showing the steaming of

a caffeinated drink that gives the impression of a cosy morning). The other major group of storytelling advertisements shows a slice of the company's history, typically the story of its establishment. In addition, there are many advertisements that feature customers or employees conveying a story that expresses their satisfaction with the product. In storytelling marketing, three elements are linked: the communication of data, personalization, and emotional impact. The aim of this linking is to build relationships and create engagement as well as brand loyalty through humor and empathy in the story. Effective narrative advertising should be inspiring, entertaining and attention-grabbing.

In their research, Santos and Espíritó Santo (2021) used costumer experiences (n = 319) to investigate whether the narrative structure of storytelling advertisements helped recipients to recall product characteristics and distinguish the product from others. The study showed that ads with a narrative structure supported the achievement of narrative transport, which ultimately served to differentiate the product from similar products. The recipient was able to compare the story of the person in the narrative advertisement with his or her own experiences or those of a friend.

The effectiveness of narrative advertising can also be assessed by the pupil dilation and eye movement measurements observed from the audience. While information is received the eyes are immobile, so the fixation points (i.e., the area of the screen focused on by the recipient) can be considered to be the most informative location (Casado-Aranda et al., 2021). By tracking the physiological changes of the recipient in response to visual stimuli, advertisers can position the information in the optimal location in cases such as newspaper articles or visuals in data-driven storytelling.

Clara and Barbosa (2021) investigated the impact of urban promotion campaign videos on social media which implemented viral storytelling. The researchers found that all the campaigns featured the expression of values alongside the advertising slogan. One video drew attention to a country's rich culture and the kindness of its people, another to the city's innovation and vibrant nightlife, while one video showcased the country's tolerance, inclusiveness and open-mindedness. All this was done by incorporating specific themes such as gastronomy, LGBTQ+ and equal opportunities, or the integration of artificial intelligence into everyday life. Three out of the five stories included a love story, but the conventions of three genres – adventure, comedy, and romantic comedy – dominated the commercials. The emotional impact mechanisms of these genres were triggered in the commercials, allowing the viewer to experience positive emotions such as love, joy, pride, satisfaction and excitement.

Tourist destinations can also be promoted through personal stories and the portrayal community group identity. Yvonne Pratt's digital storytelling workshop among indigenous communities in Canada aimed to bring indigenous people closer to their roots in order to unravel their origins and

define their belonging and identity (Lambert, 2002/2013). Pratt worked with her mother to create a digital story about her own grandmother, who was an important figure in a small community. The process of DST broke many emotional barriers for family members, who then shared many of their family stories. The community and tradition-building power of intergenerational dialogue brought out stories from the participants that had not been told to anyone else, and group identity was formed based on the stories of the community's past.

Stories linked to small local communities have a personal and emotional component. DST can also be used as a marketing communication tool to reach target audiences, with the advantage of facilitating the involvement of decision-makers and target audience members in the co-creation process. Such videos can feature tourists or residents telling stories about their experiences in a region or describing local customs. If a digital story is interesting enough, it will be shared on social media (Clara & Barbosa, 2021). Digital stories are a powerful tool for online branding, as their compact video format is conducive to social media distribution. It is a form of corporate self-representation whose narrative has a direct impact on target audiences, using both images and text to support a product's values (Lund et al., 2018).

It is not only the history of the place which has market value for tourism but also the legends surrounding a local hero. Many museums and theme parks promote their services through mythmaking (Mitev, 2015); one such example is the Aquincum Museum in Budapest, which implemented transmedia storytelling. Visitors were able to explore the temporary exhibition objects in the museum and could also discover what it was like to be a Roman warrior through an interactive video game. In addition, thematic educational sessions at the museum retold the story of the ancient era. The storyworld could be further extended with related feature films and social media posts.

The *elevator pitch* is a particularly effective tool for communicating personal brands on social media. The evocative name refers to the phenomenon where a businessperson has only the amount of time spent in an elevator to deliver his or her marketing message. As such, the pitch texts must be extremely concise, understandable, and at the same time informative and attention-grabbing. Combining DST and the concept of the elevator pitch is an effective way to build and promote a personal brand. Spanish students (n = 49) created a professional *LinkedIn* profile, where they uploaded their digital pitch stories in English. The text for the pitch had to remain within *Twitter's* maximum length of 280 characters. The students had to take care to present their competencies and goals through synthesis and narrative structure. In order to do this, the 6-sentence pitch technique was used, which included (1) a general description of the situation; (2) the presentation of the ongoing situation with its challenges and opportunities; (3) the presentation of the turning point; (4-5) challenge-solution; and (6) the conclusion. The students completed the task creatively: almost all the videos included the typical visual

elements of a pitch, and the speaker sustained eye contact with the viewer. Other students created animations and one video included dialogue recorded in an elevator (Vieira Vasconcelos & Balula, 2021).

Macroeconomic processes must also be taken into account when designing new products and services. Narrative economics is a new interdisciplinary sub-discipline of economics which is concerned with the narrative structures that influence the rational decisions of economic agents. Historical and economic processes are explained and framed by narratives from each era. The Nobel Prize-winning economist Robert J. Shiller (2019) compiled a list of basic narratives whose mutations are reiterated in narratives reflecting the spirit of the times and the economic, political, and cultural challenges of different eras. One such narrative which is popular today is the bitcoin narrative, which involves the triumph of youthful, innovative and anarchist thinking over bureaucracy and state control. The mysterious origins and value of bitcoin also imbue bitcoin with an aura of mystery. In reality, however, cryptocurrency is not valuable in itself until people en masse believe that it is. Another popular narrative of our time, since the Luddites of the 19th century, is that the spread of technology is causing unemployment. In particular, the development of robotization and artificial intelligence reinforces pessimistic visions of the labor market and, thus, existential angst.

According to Shiller, knowledge of narratives are just as helpful to economic analysts as statistical analysis. Analysts can more accurately identify relationships and predict future changes by taking into account the causal structure of events as well as the values and motivations of actors. In their analysis, researchers can draw on the research and analytical conventions of fields such as history, neurolinguistics, political science, sociology, psychology, anthropology, and literary studies. Since narratives have an impact on economic processes, Shiller believes that economic analysis should also include an analysis of narrative impacts (i.e., how they have influenced decisions in the economic world). According to Shiller, the spread of narratives should also be taken into account in research, and therefore an epidemiological research approach can also be useful for economists. Shiller draws an analogy between the spread of viruses and narratives. The economic narratives on the Internet initially attract intense interest, which dies down after a while; then, the same basic story reappears but in a different narrative (e.g., narratives explaining market booms and busts). Narratives can also take the form of different representations, ranging from songs, jokes, theories, or other narrative structures. Another interesting suggestion from Shiller is that narratives that cluster around a basic concept reinforce each other, linking their narrative elements into what he calls a narrative constellation. This means that the narrative context should always be taken into account when analyzing a narrative, as such constellations have considerable effects. According to Shiller, current economic narratives should be collected annually by policy makers through focus group interviews with people from different

socio-economic backgrounds. Narrative elements can also be collected from personal letters, diaries and the aggregation of public opinion polling.

CHAPTER 2. HUMANITIES AND ART STUDIES

2.1 Creating Narratives in Humanistic and Art Studies

In the humanities, storytelling is found in philology, philosophy, and art theory courses which focus on the analysis of narratives in the visual or moving arts, music, literature, and film from different periods. In addition to interpretative courses, however, a number of universities offer courses in *creative writing* and *academic writing*, which provide students with an insight into the formal and stylistic characteristics of fiction and academic publications. The themes of such courses include the creation of texts within a given formal framework.

However, universities of arts offer students a wide range of courses from which they can learn about the aesthetic conventions of representation in their discipline and how these are suitable for self-expression. In these courses, students can learn about the effects of the formal characteristics of self-expression and the tools by which they can communicate their emotions and ideas in a way that is understandable to their audience. Art theory courses complement these creative courses with a historical approach and an interpretative reflection on artifacts.

Courses in which students themselves acquire skills or knowledge through creative work are particularly common in arts higher education. In the visual arts, such as sculpture, photography, printmaking, and architecture, students learn technical methods of representation and the use of tools for self-expression through creative activities which are studio-based and master-facilitated. A large proportion of music courses aim to develop a high level of technical reproduction of composed music in their students, and performing arts courses are also aimed at students' skill development in plays and choreography by well-known artists. There are also experiential course themes which support individual and group creation in the form of master-led workshops similar to visual arts training. Such courses typically include composition exercises, counterpoint courses based on score exercises and choreography creation exercises. In addition, improvisation exercises are included in the course offerings of performing arts universities, both in theater, music and dance.

Narrative structures can also be created in screenwriting courses. In creative exercises, students use screenwriting tools to develop their film ideas into a finished screenplay. Knowledge of film narrative is useful in writing fiction screenplays and also for documentary studies. In the documentaries

produced by the Budapest School in the 1970s, there was already a tendency to include the life story of the person portrayed in the film. Such was the case with *Gyuri Cséplő*, in which the main character's private life and way of thinking were revealed, representing individuals from the same socio-cultural background. Such representation serves a high degree of emotional identification. This tendency has continued in the history of Hungarian documentary films, especially in the work of Tamás Almási (Stóhr, 2019). The life stories revealed in narrative documentaries are also invaluable in the teaching of history and social studies.⁵⁹

The analysis of interactive digital narratives with non-linear or branching narratives can also be included in a screenwriting course, as many digital applications allow the modular structure of the narrative to be visualized in a way that is easy to follow (see Part II. Chapter 4).

Although technical media have always been present in film and photography-related courses, they are now present in virtually all areas of arts higher education. In performing arts research and training institutions, narratives are constantly being archived and students learn to digitally edit their own work. At the Moholy University of the Arts, students can learn the latest digital techniques of storyboard and comic book creation in the Visual Storytelling course. At the Hungarian Dance University, students can develop their skills in using tools for sound and video editing in the Media Studies course.

Students at art universities have a strong sense of professional commitment combined with continuous professional self-reflection. Students feel strongly motivated to express their emotions and thoughts through artistic creation. Those preparing for a career in dance have expressed their professional life stories, motivations and plans in the form of digital stories. DST workshops give them the opportunity to reflect on their professional lives and to express themselves through new media. The digital story is an artifact in itself and a multiple representation, as it is composed of visual, musical and textual elements. With DST, students can learn how to verbalize and synthesize their thoughts and how to achieve online self-representation through their stage photos (Lanszki, 2016c).

DST can also be used to teach genre theory in humanities courses on art theory and in the mimetics of arts, dance, film, and theater studies. In the *ds106* online course, the genre characteristics of horror film were taught through DST methodology (see Part IV, Chapter 7). But transmedia storytelling is also an excellent tool for art theory courses, providing an opportunity for students to compare representations of a theme or fable across different artworks. Data-driven storytelling can also be integrated into art theory courses, as

⁵⁹ E.g., *Our Cells (Sejtjeink)*, which presents couples attempting artificial insemination, or the biographical memoir *Judgingly (Ítéletlenül)*, which reveals the life stories of women imprisoned for political reasons in Kistarcsa (Stóhr, 2019).

it is suitable for representing complex temporal and thematic contexts. Infographics, timelines and presentations can also be used in documentary theater performances, such as in the production *Excellent Workers (Kiváló dolgozók)* (see Part III, Chapter 5).

Students from art schools can also engage in interprofessional cooperation in the creation of performative artwork, in which they can present their narrative through different tools and media with a common purpose. At the highest level of creation, they can also collaborate with other major disciplines, and students from different universities can incorporate knowledge of cultural heritage or reflections on current social issues into their artwork.

2.2 Narratives in Library and Religion Studies

In Jewish tradition, stories should be remembered and passed on to future generations. *Záchor! (Remember! Be remembered!)* calls attention to the importance of storytelling and remembrance within the community (Heller, 2015). In Roman Catholic culture, the act of confession is a practice from childhood on how to recall one's actions while reflecting on them and creating a narrative. The narrative served as a tool for cultural transmission through oral tradition long before technical reproduction. The narrative structure of mythological, biblical, and historical stories was the epic form, which allowed information to be more easily memorized (Keszeg, 2011). However, students of the 21st century can present religious narratives in the form of data-driven, transmedia, or digital storytelling.

Narratives stored on external media are organized and made searchable by libraries, while archives catalog institutional or private narratives related to local communities that are not officially published. Most resources in various formats will be digitized and stored in libraries and archives, and will also be searchable and accessible online. In addition to digitized resources stored on traditional media, digital libraries also collect resources that were originally created in digital format. These include digital stories, infographics, websites and oral history narratives. The *British Library* site allows the user to search the oral history narratives currently available.⁶⁰ To organize digital narratives, librarians need to work with museums as well as cultural and educational institutions to index items and make them searchable in a thematic system. The *Oral History in the Digital Age* project offers interdisciplinary best practices for this complex activity.⁶¹

Librarians help students to search, select and evaluate information from any type of source, whether it is primary, secondary, or tertiary, online or in print. However, libraries are also cultural spaces, arenas for developing

⁶⁰ <https://www.bl.uk/subjects/oral-history>

⁶¹ <http://ohda.matrix.msu.edu/>

students' information literacy where they learn about organizing resources and the criteria for determining whether they are credible. Students can visualize the information in a library through data-driven stories or organize it into a transmedia narrative. Archives offer the opportunity for genealogical research, as private sources can provide excellent material for uncovering a personal digital history. In an exercise by Leaf and Diaz (2017), students were asked to trace the history of objects from a medical history museum whose use is no longer known. In addition, Hecker (2021) presents practices in local history education that combine virtual library services and archival sessions.

Libraries and archives are not only places for research but are also spaces for education in a broader sense. Many libraries organize reading meetings for writers or book clubs. Nagy (2004) believes that the library is an ideal place for regular bibliotherapy sessions and proposes the integration of bibliotherapy courses into librarian training in Hungary.

2.3 Journalism Studies

Media theory, political science, anthropology, and sociology focus on mass media narratives, which are typically published by political actors or media institutions on various social media platforms. Courses in communication and media studies may examine the structure of these micro-narratives, as well as their serial publication patterns and the reactions of the target audience. As part of a systematic analysis, students can identify the tools of visual and verbal manipulation and explore the mechanisms of action of virally circulating political narratives.

However, news narratives can also be approached through sociology, specifically the study of production, where an important aspect is the reconstruction of the organizational background behind the production of news. In the analysis of the Web 2.0 news stream, the role of gatekeepers in the selection process and the role of news directors, editors, and reporters can serve as discussion and research topics. It is also worth examining the criteria used by newsrooms and press agencies to select which events are *newsworthy* and whether ideological intentions or the journalist's value preferences are factors in the selection process.

In addition to interpretive and reflective practices, students can also create their own memes, infographics, and videos that comply with the principles of professional media communication. Publishing data-driven stories is a natural part of 21st-century mass communication. Journalists aim to present data in new forms, using dashboards and infographics which allow complex topics to be presented in a multidimensional, logical, and concise way. An additional benefit of data-driven stories is that they also provide clear information to the target audience about hidden contexts or difficult-to-understand scientific connections, thus educating and inspiring change in the

audience and decision-makers. The aim of publishers and media companies is to encourage the audience to spend as much time as possible in front of a data-driven story, and to get them to click on it. In order to achieve these goals, the data-driven story must be reliable, understandable, memorable, engaging and disseminable (i.e., shareable across as many platforms as possible) (Amini et al, 2018). Although newsrooms are building their (nowadays mostly dynamic and responsive) dashboards through complex research and creative teamwork, students can still try out applications to create data-driven stories at an amateur level during their university studies. There are a number of open source applications that can be used to create infographics⁶² and animations⁶³. *Google Data Studio*, *Microsoft Power BI* and *Jupyter*⁶⁴ can be used for data analysis and visualization.

The Web 2.0 turn has also transformed traditional media into a space for social communication. Infotainment and show programs now include transmedia and social media extensions, and news portals now feature both the content of professional journalists and posts from amateur bloggers. The BBC's bilingual project *Capture Wales*⁶⁵ published the digital stories of Welsh individuals on television and online. Journalists visited communities in Wales and ran DST workshops with the aim of showing local values through everyday stories. The editors also upheld the journalistic code of ethics, assuring that the digital stories of vulnerable persons would not be broadcast. All the stories have been transferred to the BBC Video Nation archive⁶⁶ and the National Museum of Wales⁶⁷ (Lewis & Matthews, 2017).

The Research Center for Minor Media/Culture at Eötvös Loránd University in Budapest researches the media representation and self-representation of minority groups, especially the Roma population in Hungary. Participatory filmmaking is both a self-presentation of disadvantaged and marginalized young people as well as a narrative community action in which the participants create, learn and participate in democratic action with members of the majority group (i.e., with students). Within the framework of action research, the students carry out the analysis from a media anthropological perspective. The videos can then be shared on social media as an authentic media representation of the minority group (Müllner, 2020). Community filmmaking can be supported by DST, which Alexandra (2017) describes as a medium between a documentary photo essay and an ethnographic film. The former is an audiovisual work made from still images, while the latter is a video-based reflective annotation accompanying anthropological fieldwork (Pócsik, 2012). The journalist can personalize a narrative based on

⁶² www.canva.com

⁶³ <https://pivotanimator.net/>

⁶⁴ <https://jupyter.org/>

⁶⁵ <https://www.bbc.co.uk/wales/audiovideo/sites/galleries/pages/digitalstorytelling.shtml>

⁶⁶ <https://www.bbc.co.uk/videonation/archive/>

⁶⁷ <https://storytelling.research.southwales.ac.uk/>

the analysis of the data corpus by presenting individual life situations, for which the sharing of digital stories and social videos on a Web 2.0 platform serves as a fitting transmedia complement.

The integration of DST into media and communication theory courses also serves to develop students' visual skills, as they can practice a meaningful and reflective way of verbal and visual narration by creating storyboards and editing images, sounds and videos.

CHAPTER 3. SOCIAL STUDIES

3.1 Teacher Training

To achieve teacher effectiveness, the main aim of teacher education is to develop students' attitudes and commitment, which requires that pre-service teachers are actively engaged in the learning process. In teacher education, students ideally develop the ability to construct their own knowledge and to self-regulate their learning (Falus, 2004).

The definition of what makes a good teacher and the factors that make some more effective than others are both contentious issues. However, there is a relatively broad consensus that the development of the practical competencies of pre- and in-service teachers can be achieved through the development of different skills. International frameworks (e.g., ISTE and DigCompEdu) and models (e.g., TPCK and SAMR) have attempted to define the optimal teacher competencies (see Part IV). A fundamental task in teacher education is the development of reflective practice (Szivák, 2010) in order to enable teacher candidates to make sense of the broader context of the teaching-learning process by reflecting on their own pedagogical practice.

The reception of stories on both the visual and verbal levels has a stimulating effect on the lower left inferior frontal gyrus of the brain, an area that plays an important role in controlling emotional responses (Urgesi et al., 2016). Sharing and discussing narratives within a group, articulating personal experiences of the content, and listening to the experiences of others all evoke emotional involvement. Narrative-based learning enhances involvement in the learning process, and students learn to listen to each other in a safe environment in which they create films for themselves and for the audience. In addition, the students feel responsible for the quality of their work and therefore pay sustained attention to the content they are producing (Lanszki, 2017).

The art of narrative, be it a song, drama, novel, or theater, are treated by most schools as a necessary evil, even though the success of education depends on developing students' sensitivity to narratives. Therefore, by bringing together the social sciences and humanities, more specifically literature, history, drama, and law, educators can open up new perspectives in education through active

exploration of narratives. Narratives reveal the essences of standard reality that include rule-breaking episodes and changes that lead students to critically relate to stories and ask relevant questions (Bruner, J., 1996).

The integration of DST into teacher education can provide multi-level development among pre-service teachers. An integral part of the process is the search for and selection of resources, which are filtered and organized into a narrative through the students' individual reflections. In the process of narrative construction, the student contextualizes the message and seeks a logical connection, and the narrative reveals its own internal logic (i.e., how the student uses narrative structure to weave the fragments of content he or she has discovered into a causal chain). The method thus allows for an effective form of cognition. Listeners are not forced to accept ready-made explanations but can interpret existing explanations and add their own perspectives, in so far as they formulate the conclusion of the story for themselves.

The co-creative method of DST is an excellent way to develop reflective and critical thinking as well as social skills. DST also provides an opportunity for intercultural communication by representing the cultural and social diversity of group members, as it promotes acceptance and positive attitudinal change between members of heterogeneous groups.

A change in students' attitudes and the development of empathic skills was achieved in a Spanish experiment in which students were confronted with the life stories of Syrian refugees through processing press narratives using DST (Diaz, 2016). Another intercultural experiment involved the creation of digital stories centered around the topic of "otherness" by students who lived far apart from each other. In the process, students moved away from mainstream, stereotypical approaches to their chosen topic and developed an increased tolerance among community members (Grant & Bolin, 2016).

Developing empathy is another important educational goal in teacher education. DST challenges the audience to place themselves in the situation of others and look at the world from another perspective. In an experiment by Reyes and Brinegar (2016), students ($n = 6$) created digital stories about their own learning difficulties. Identifying each other's narratives, the students engaged in a constructive dialogue, a process that sparked empathy among members of the community. Students discussed the development of their own education in their digital stories, which were autobiographical analyses that revealed who had access to cultural goods. Elements of otherness and equality could also be identified in the content analysis of the completed stories. One student had more difficulty accessing literary content due to his dyslexia, while another experienced issues due to his dysgraphia and apraxia; a third student encountered issues as a result of his hearing impairment. Their films also drew attention to how isolated they were due to their learning difficulties. DST provided the learners with an opportunity for reflection and self-reflection, with students evaluating their lives and discovering their own agency.

In addition, the integration of DST into training allows students to become acquainted with a project-based activity method based on the use of digital tools, whose skill- and personality-developing effects they can experience for themselves and later incorporate as a learning management strategy into their own methodological repertoire. The method also promotes cooperation, communication, and problem-solving skills, as well as helping students to become acquainted with one another. As DST can be used to develop all three components of the TPCK model, it is highly recommended to include it in the methodological training of teachers (Robin, 2008). Pre-service teachers' knowledge of subject content can be deepened through source research, while their pedagogical-methodological knowledge can be enriched by learning about cooperative and individual learning and the role of the teacher as a facilitator. Furthermore, technological knowledge can be enhanced by learning about different software. This can be seen in a study by Sancar-Tokmak et al. (2014), who developed the skills and knowledge of their pre-service teachers in real education by using DST for the teaching of topics from the Turkish National Curriculum.

Australian trainers used DST to prepare pre-service teachers for real-life teaching situations, developing resilience and providing them with a set of examples of risk situations, as well as strategies for coping and protection (Ng & Nicholas, 2015). Students can also experience how DST can be used to process subject content. It can be applied to healthy lifestyle education, environmental awareness (Kasné Havas, 2017), and to discuss moral dilemmas (Lanszki, 2015b). DST can also be used to summarise a larger learning unit of any subject (Tóth, 2017), but it can also play an important role in archiving the values of small local communities (Péter & Vass-Eysen, 2017). In history and literature lessons, it can also be used in the form of role-playing by putting students in the shoes of great personalities (Molnárné Kövér, 2017; Weil, 2017). Schank (1999) argued that teaching historical events in schools is more effective if students can recall family dilemmas and events or are put in decision-making situations in simulated situations. Schank was convinced that schools should engage students in case analysis since knowledge is found in life situations, not in facts – hence the teacher must be a good storyteller and the student a good story analyst.

3.2 Psychologist Training

Storytelling is not only an important learning activity for children. The situations and problem-solving episodes in narratives are also a model for adults in their everyday lives. Péley (2013) argues that the practice of diagnosis and therapeutic processes can be renewed by combining psychotherapy with a narrative approach.

Storytelling covers the practice of clinical psychology at many levels. The clients' current problems, conditions, and their perceived causes are also told in a narrative structure, revealing their narrative identity by telling their life stories. The therapist uses the context revealed by the fragments of the narrative to move towards a diagnosis, which is a narrative that thematizes both the causes and the therapy. At the third level is the narrative in which the therapist shares with his supervisor or records in his case diary the events of his dialogue and collaboration with the client. Finally, the therapist may intentionally include storytelling exercises in the therapeutic process. In the narrative therapy process, the client and therapist reframe views of non-adaptive behavioral patterns into a narrative that offers a hopeful and rational possibility for change. Like narrative therapy, the point of multi-step group therapies (such as voluntary sessions of Anonymous Alcoholics) is to make life style change part of the individual's narrative identity while members support each other, learn from each other and become resilient together through sharing everyday stories (Kottler, 2015).

The autobiographical narratives play an important role in the process of diagnosis, as the episodes reveal the connections between the self and the characters in the life story, as well as the typical life situations of the narrator. Écsi (2018) considered the narrative categorical analysis of stories as a more effective classification method than the scaling survey in ADHD diagnosis, as children's narratives provided deeper insights into behavioral characteristics than the standardized test. In turn, detailed problem identification can contribute to the design of a targeted therapy.

Narratives also come up in therapy when the therapist recommends a book to the client whose protagonist is in a similar situation. This helps to reveal to the client more nuanced details of the life situation and the perspectives of others (Kottler, 2015). Kottler (2015) argues that bibliotherapy is essentially a focused group therapy in which the participants critically evaluate the work, and compare and reflect on the events and processes with their own experiences. Especially in crisis situations, bibliotherapy can have an effective therapeutic effect. The individual or group sessions are based on literary work that deals with the clients' problem. As the analysis of the narrative helps to bring to the surface the experiences that the client has had in a similar situation, it clarifies his or her approach to the issue. The narrative acts as a catalyst, and by articulating what the work means to the client, it also initiates a process of self-reflection, which can help in formulating coping strategies (Rubin, 1979; Gulyás, 2019).

Not only written stories, but also stories represented by any medium, such as film, TV shows, video games can be used in a therapy. Stories provide an opportunity to decode patterns of social interaction during therapy. The group analyses the actions and reactions of the characters, which can be put in parallel with the life events of the clients. Sometimes, literary or film narratives allow for the reliving of experiences that would be risky but can

be a practice for developing resilience. In receptive bibliotherapy, a narrative is processed in which interpersonal conflicts or life situations relevant to the client are presented. But bibliotherapy can not only be receptive-reflective, it can also be based on the active participation of the client through the practice of creative writing. Thus, in addition to therapeutic processes based on the client's receptive-reflective attitude, the client can be involved actively in a kind of art therapy, in written or oral textual production (Kottler, 2015). Bibliotherapy as an art therapy practice can be an integral part of therapist training. Bartos (1989) used it effectively in group therapy with alcoholics.

Narrative therapy is particularly indispensable for groups of clients with addiction problems, or are grieving. In systematically structured complex therapeutic processes, life story narratives emerge in which attachment patterns can be explored. Relational and transgenerational attachment patterns and the client's coping strategies are revealed to the therapist by reconstructing the story. In the dialogic process, clients discover, experience, validate and reflect on their positive and negative emotions. The therapist and participants examine how the client has responded to critical events in his or her life and what of these scenarios have been retained in his/her present relationships. With the help of the therapist, the client explores hypothetical new scenarios. During the storytelling, the client may both experience support while also formulating future perspectives and strategies for action (Dallos & Vetere, 2009).

Not all autobiographical narratives have a coherent narrative structure, as clients may not be able to effectively verbalize their life events and feelings. The narratives of newly traumatized clients are often fragmented and incoherent, but the client's use of language can also provide a point of reference in therapy. The therapist can observe the extent to which clients distance themselves from the events by conveying their own narratives. Clients might also share the narratives of others, using the third-person perspective during the storytelling. The use of present and past tense can also reveal what stage the client is in terms of the coping process (Kottler, 2015).

This is also the case for preschool-age children. Jakab (2018) explored early childhood attachment among preschool children using Dallos' 13 stories revolving around everyday problems. These stories featured the attachment person and a child, and the child had to continue the story once it started. The children used the characters to share the stories of their interactions with their parents at home.

Children who have been victims of domestic violence or abuse can reconstruct their interactions in dramatized role-play games. This allows them to gain more control over the events during the therapy process. In a safe, therapeutic environment, the therapist is also involved in shaping the narrative and using symbolic story devices to help reframe the child's life situation. The child can thus, together with the therapist, make sense of anxiety and provoking events in the safe space of play while at the same time

establishing healthier socialization patterns. The goal of play therapy is to build the child's self-esteem and to create an abuse-free identity for the child through the help of the therapist (Cattanach, 1992). The outcome of literacy therapy for young people in similar life situations is for them to experience control over their own lives through constructing their life narratives. Clients learn that their feelings and conditions are normal despite social expectations, norms, and stereotypes. Group narrative construction has also been shown to contribute to the development of group identity and help clients move out of perceived or real isolation (Torrell, 2021).

DST is not a therapeutic method but can have therapeutic effects. In fact, articulating distressing content can help individuals to accept it and incorporate the memories into their identity. Unspoken thoughts and fragments of memories are logically organized during the DST process, which can help traumatized patients gain control over their memories (Bán & Nagy, 2016). In Lanszki and Kunos' (2021) experiment, students with burnout syndrome created digital stories in connection with their school experiences. They described what had happened to them since they first entered the school building and then reflected on their current situations. By the end of the process, the students were able to conclude their story and formulate perspectivist and constructive strategies for themselves.

In the process of creating a narrative with a vulnerable group, care must be taken to ensure that the dignity of the clients is not compromised. In workshops by Cahoon et al. (2018), 81 people (comprised of patients, staff, and managers) created a digital story about their experiences in healthcare; the exercise resulted in a 45% reduction in complaints about care and a 9% reduction in complaints about communication after 2 years, and a 50% reduction in complaints about negligence. 91% of those surveyed reported that staff listen to patients and listen to them.

DST can also help individuals and their family members in long-term therapy. In a study, family members of people with psychiatric illness ($n = 6$) created a digital story through a painful, exhausting, and re-traumatizing process. Together, the group members relived their loss, supported each other by listening to the stories, and were able to compare and discuss their experiences. The process helped the group members to reassess their life circumstances and their abilities. The process led clients to revise their life narratives, which after the workshop were no longer seen as simply a series of losses (Shea, 2018).

Facilitators used DST in group therapy for 12 HIV-positive patients in Zimbabwe. The task was to capture the defining moments of their lives in films, with the process showing a clear therapeutic impact, according to the participants. During group discussions preceding the creative activities, participants explored the elements that were common to all their stories. Traumatic elements such as learning about the diagnosis, uncertainty, loss of hope, loss of family members, stigmatization, social discrimination, and

loneliness all appeared in their stories, highlighting the disease's complete impact on every aspect of their lives. The participants then looked for points of support and ways to deal with the situation: some suggested support organizations, while others mentioned the acceptance of family and partners. The method helped the individuals to move away from a negative self-identity, improve their self-esteem and control their negative emotions. Through the formulation of goals and perspectives, the group members became aware of their own agency, which was extended to individual and later social acts (Willis et al., 2014). In the case of HIV-positive children in Tanzania, a Story Circle was followed by the co-creation of hypothetical future-oriented texts that were acted out and recorded by the children. In an attempt to interpret their stigmatized and marginalized situation from a more optimistic perspective, the children formulated plans for their own futures (Duveskog et al., 2012).

When dealing with sensitive issues, care should be taken as it is possible that in the process of processing painful memories, individuals may be re-traumatized or their story may traumatize another group member. Considering these cases, such workshops should not be run without a psychologist to ensure its therapeutic effect. When touching on sensitive topics, the facilitator should make the participants aware that they can stop the process at any time, that they do not have to tell a story just because others find it exciting, that the finished story will not be published without their consent, and that they do not have to fear the judgement of others. In addition, the facilitator should ask the workshop participants to keep the conversations confidential and not to reveal anything to others outside the group. The facilitator should ask the clients if they are able to work with images related to their trauma; if not, facilitators can communicate drawings or symbols can be used instead of photos (Ward & Bullivant, 2017).

3.3 Helping Professionals' Training

There have been numerous experiments and creative projects in which helping professionals have used DST to make a difference for their clients and in the wider social context. The *Silver Stories* program, a two-year collaboration between six countries, brought together a group of elderly individuals to create digital stories. Humanistic gerontology is a person-centered interdisciplinary field that brings together interpretive approaches from psychology, anthropology, and sociology to develop a new approach to the issue of caring for people with dementia. The aim of the program was to explore the lives and experiences of older people through stories. In the process, the elderly participants were asked to create stories through constructing contexts and revisiting their relationships. The digital stories they produced were widely shared: first among themselves and then within their families. Finally, the videos were introduced into the higher education

context, where the stories of the clients were directly presented to students specializing in elderly care within the health and social care field. Following the film screening, teachers, students and practicing elderly care professionals received DST facilitator training to apply the method in their own work. The experiment showed that through shared storytelling and video-making, elderly people living with chronic illnesses experienced a sense of agency and rediscovered their identity. The stories also changed the perceptions of family and friends, and caregivers became more attentive to the people they cared for in the nursing home (Jenkins, 2017).

The *Patient Voices* program has also led to a change in attitudes among health professionals. After taking part in a DST process, the doctors, nurses and health professionals involved developed a patient-centered approach instead of solely focusing on the treatment of symptoms (Hardy, 2017). Over four years, Anderson (2017) developed similar reflective habits among Irish social work students ($n = 45$) who were studying in a master's degree program. The students created digital stories about situations that were causing difficulties in their own lives. The workshop included topics such as domestic violence, sexual abuse, poverty, racism, learning difficulties and mental illness. The process, drawing from the *Patient Voices* project, involved the creation of a safe place, a circle of trust, and appropriate information on copyright and informed consent. In the longitudinal action research, the researchers collected data during and after the process, and participants' reflections on the process and their videos were analyzed using thematic content analysis. The qualitative research revealed that DST had a transformative effect on the students' personalities and professional knowledge. Students became aware that change can be achieved even when it seems impossible. Recalling and articulating events gave them a sense of control and observing and analyzing themselves also helped them to better understand others, which led to a change of perspective. At the same time, the students also developed professionally, as they were able to address, openly thematize and critically evaluate the problems of others. They also felt comfortable using the method with their clients to process challenging situations. The results of the experiment show that DST deepened the students' critical thinking and increased their self-efficacy.

In addition to its personality and skill-building effects, DST is also an excellent research tool for exploring difficult situations. Lindveg (2017) argues that DST is a discovery-based, dialogue-oriented participatory research approach that includes process, products, and dissemination. The researcher takes the role of an active participant in the whole process; not as an external observer, but as a participant who, while facilitating activities, also collects empirical data and interprets them. The story that emerges is the case itself, which is the result of a dialogue between the group members with the researcher and the research participants, interacting as equal partners in the process. During the dialogue, the parties interpret the emerging themes,

find common patterns, and the researcher may abandon previous views or stereotypes. The researcher becomes able to understand how the research subjects interpret and perceive the world, and these experiences are then conceptualized by the researcher. How the researcher relates to the often sensitive data from the process is a crucial ethical issue. Since an intimate relationship of trust is established between the researcher and the participants, the way in which the data will be used and the conditions of disclosure must be clarified at the beginning of the process.

In addition to communicating results, action research using DST in minority research also aims to bring minority and majority populations closer together. Through dissemination, the majority of the society receives authentic information about the minority that can be linked to an individual, allowing the topic to become personal.

CHAPTER 4. MEDICAL AND HEALTH STUDIES

The focus of DST workshops in healthcare is not on the digital story as an artifact, but rather on the reflective process. Healthcare professionals often find it difficult to face tragic life situations in the course of their work. This is particularly true in the oncology department, where staff regularly alienate serious cases to avoid major trauma. However, this distancing has a negative impact on patients' daily lives. In their continuing education, oncology assistants in Alaska used DST to frame sensitive topics in a positive way through confronting difficult issues alongside content such as end-of-life planning, survivors' stories, and the importance of follow-up testing. The personal stories brought their textbook knowledge closer to the participants, which also changed their attitudes and behaviors towards patients in general (Cueva et al., 2013). Supporting the well-being of healthcare workers was also the aim of the *Patient Voices* program in Cambridge, as the workshop facilitators wanted to prepare nursing students for the difficult practical situations that students face in the real world after graduating from university. The newly graduated nurses ($n = 7$) created digital stories of workplace situations that were stressful for them. The emotional charge of the videos and the personal narrative style validated the narratives, and the practical examples were analyzed by the students as part of the training curriculum. The videos about frustrating experiences and reality shock were later included as illustrative material in nursing education. At the same time, the digital stories provided feedback to the leaders of the institutions as a vision of the current state of affairs (Stacey & Hardy, 2011).

In another *Patient Voices* workshop, five rheumatism patients created digital stories. Although rheumatism is a problem affecting a fifth of the UK population and causes persistent complaints, little attention is paid to people

suffering from the condition. Patients found it liberating to tell the story of their disease and the films have since been shown in nursing education (O'Neill, et al., 2018).

The dissemination of digital stories on social media platforms can also successfully contribute to prevention activities by highlighting issues that are less represented in mainstream media, such as HIV infection, unwanted pregnancies, and the impact of smog. The Cambridge *Patient Voices*⁶⁸ program has also incorporated easy-to-share digital stories into its e-learning curricula to raise the quality of health services. Their educational program aimed to humanize healthcare through sharing personal stories alongside statistics and graphics. The project leaders, Pip Hardy and Tony Sumner aimed to improve the healthcare system by understanding both institutional and individual perspectives; in this sense, digital storytelling was used as a quality assurance tool. Doctors and nurses were confronted with situations such as the impact of alienation on communication, inhuman conditions, and behavior towards patients, and helped healthcare workers to empathize better with their patients. Because these stories involved trauma, two facilitators joined the group during the workshop to help participants in crisis situations. Creating an atmosphere of trust is also a central issue in such projects, and to this end, the group members had dinner together on the first evening of the three-day workshop and the facilitators offered to share a meal on the second day. Another important aspect is that the workshop was followed up on. Patients who were unable to express themselves verbally for some reason were given the opportunity to express their views (Lambert, 2002/2013). DST has also been included in the training of physiotherapists, radiotherapists, and nurses as a useful method for developing communication and empathy skills. Students participated in workshops with cancer patients, people with long-term illnesses, and psychiatric carers, giving them the opportunity to interact directly with people who were struggling with the problems they were being trained to treat (McLean, 2018).

Patients' healthcare experiences do not always reach doctors; for this reason, trainers introduced patient-generated digital stories into the training of medical students with the primary aim of developing students' reflective thinking. Then, in their own digital stories, students were asked to reflect on their clinical experiences, most of which were about the pressures faced by those on the front line of healthcare. The students were liberated by the reflective process and the videos later became teaching materials that illustrate the emotional, ethical and professional challenges of the medical profession (Anderson & Kinnair, 2018).

DST was also used to promote sensitization in the training of Latino students at the University of Colorado who produced digital stories and experienced the direct benefits of the method. The participants created

⁶⁸ <http://www.patientvoices.org.uk/>

expressive, self-identical films through a digital medium. Through group work, a sense of belonging and group identity was strengthened. At the same time, by presenting their own lives, the students were able to directly articulate problems that would have been difficult to bring to the surface due to their minority status. Digital stories, the researchers argued, provide an opportunity for interaction between the helper and the person in need, which also contributes considerably to effective and rapid intervention (Cushing & Love, 2013).

The main benefit of DST in this sector is that it connects theoretical knowledge with real-life experiences and the experience of patient interaction (Price et al., 2015; Haigh, 2017).

The *Silence Speaks* program, launched by *StoryCenter* in 2002, publishes digital stories on gender, public health, and human rights and disseminates the training materials produced for them. The *Silence Speaks* program aims to bring invisible stories to the surface, particularly to decision-makers and the public (Hill, 2008). The work of *Silence Speaks* groups is often linked to narrative therapy or art therapy. In most cases, the author publishes his or her video online, and these thematic collections are often included in discussion forums and conferences to encourage social action.

DST in healthcare education confronts students with the experiences of patients while also providing an opportunity for students to engage in professional discourse, thus developing their critical thinking and professional self-reflection. DST can also serve as a means of supervision and burnout prevention for caregivers.

List of Terms

Some terms can appear in different disciplines. By definition, the discipline relevant to the book was used.

(ant) anthropology, (film) film theory, (hist) history, (inf) informatics, (lit) literature theory, (med) media theory, (narr) narratology, (ped) pedagogy, (phil) philosophy, (psych) psychology

#me too movement (med): public testimonies of people who have typically suffered sexual harassment

adaptation (film, narr): application to another medium

affective (psych): related to emotions, feelings

agency (psych): a sense of one's ability to act effectively

anime (film): cartoons based on Japanese manga

AR (inf): augmented reality

artifact: a work of art

artificial intelligence (inf, med): technology that can perform complex operations through adaptive learning, such as chatbots, facial recognition systems, translation software

assertive (psych): argumentative but not offensive to others

attachment (psych): the mother-child bond that develops after birth and during infancy

authoring tool (inf): software that supports the spatial representation of the branching structure of interactive narratives, such as *Storyspace* or *Twine*

big data (inf): the vast amount of data that has accumulated and become accessible since the digital revolution, consisting of many different types of elements which are processed rapidly in an algorithmic way

blog (med): a term created by merging the words web and log (weblog) and then shortening them to blog; a diary that allows users to communicate their opinions and creative products publicly; there are also thematic versions; an example of an open source blogging platform is *Blogger*

bot (inf, med): abbreviation of the word robot; software that performs automatic tasks using algorithms

Budapest School (film): a movement of documentary fiction filmmakers that started at the Béla Balázs Studio in Budapest in the 1970s

causality (film, narr): cause and effect

chatbot (inf): a term formed by merging the words chat and robot; an artificial intelligence-driven software that provides automated written or verbal answers to user questions; used by many companies as a virtual assistant on their websites or social media platforms

cliffhanger (film): a pending plot in a series of episodes

cognitive (psych): related to cognition, thinking and information-processing activities

connectivism (ped): a learning theory characterized by network-based learning

constructivism (ped): a learning theory focusing on the individual construction of knowledge

content-sharing portal (inf, med): a site that allows you to share images, audio or video, such as *YouTube* or *Flickr*

cosplay (med): a term derived from the fusion of the words costume and play; an event in which fans participate by dressing up as characters from their favorite genre, series or film

Creative Commons License (med): a licensing system that offers a variety of options for the legal sharing and publishing of content

cross-media (med): the simultaneous delivery of content across multiple platforms

dashboard (inf): data visualization that displays several graphs at the same time and allows for complex data analysis

data noise (med): a data corpus containing too much data or redundant information

database (inf): a set of digital or digitized data organized according to similar characteristics

deepfake (med): a form of content forgery in which artificial intelligence is used to superimpose the face and voice of one person onto a video of another person

didactics (ped): a discipline concerned with the objectives, methods and organization of education

diegetic (film): an element that is integral to the narrative plot

digital scrollytelling (inf, med): a digital narrative technique involving smartphone and scrolling technology

dynamic visualization (inf): an illustration of trends and processes in audiovisual form

edutainment (med): a fusion of the words education and entertainment, meaning the teaching-learning process through entertainment

elliptical narrative (narr, film): non-linear narrative editing based on omission

emergent narrative (inf, med): the random narrative organization of content that unfolds in digital frameworks (e.g., video games or social media) in an uncoded way through user interactivities

- emoticon** (med): an emoji representing the emotions and cultural codes of the human face (e.g., the smiley face)
- empiricism** (phil): the dominant epistemological movement of the 17th century which focused on empirical knowledge
- ergodic literature** (lit, med): a narrative that takes its final form after active intervention by the user (e.g., narrative video games)
- fabula** (lit, film, narr): story; the sequence of events narrated in a temporal and causal context
- fake news** (med): a text which is similar in form to news but which contains misleading information
- flashback** (narr): recalling events that happened at a previous point in the plot
- flashforward** (narr): the evocation of a later event at some point in the plot
- forum theater** (ant, ped): a community theater performance about social dilemmas in which the audience is actively involved in the plot
- franchise system** (med): a business brand model protected by a patent or trademark, which provides uniform operation and image for all its representatives
- gatekeepers** (med): filterers of mass media content, typically editors
- gif** (inf, med): an animated small image
- grounded theory** (ant): a qualitative research method in which the researcher carries out sampling, data collection and analysis in a systematic step-by-step and parallel manner and develops a theory based on the partial results.
- hashtag** (inf, med): can be used to thematically organize and index content shared on Web 2.0 platforms
- hermeneutic circle**: a scientific approach based on the unity of the interpretation of the part and the whole
- high-concept series** (film, med): a series with a complex narrative created with the help of a creative team, directors and actors, such as *The Handmaid's Tale*
- homo narrans** (narr): the storytelling human
- hyperlink** (inf): a link to external content that deepens the meaning of a text
- hypertext** (inf, med): text that appears in a digital environment which is hyperlinked to external but relevant content and is therefore networked
- immersion** (psych, med, film): a subjective experience in which the recipient is completely immersed in the plot (see also narrative transport)
- immersive storytelling** (inf, med): the addition of VR or AR technology to storytelling in physical space
- indexing** (inf): content tagging based on common property; a Web 2.0 form of content organization
- influencer** (med): voluntary content producer with followers on Web 2.0 platforms
- infographics** (inf): a term derived from the merging of the words information and graphics which refers to an illustration produced in a graphically sophisticated form using pictorial and textual information

- information society** (med): a term used in contemporary society to describe the social, cultural and economic importance of information and the tools and media associated with its production, processing and dissemination
- infotainment** (med): a term deriving from the fusion of the words information and entertainment, which in modern mass media refers to tabloidized, entertaining information
- integrated learning environment** (ped): synonym for blended learning; face-to-face learning and teaching supported by digital technology
- interactive interface** (inf): synonym for responsive interface; allows the user to intervene in the narrative using an external device (typically a controller, smartphone, or remote control); typical of Web 2.0 platforms, video games and interactive television
- interactor** (inf, med, narr): a 21st-century recipient, viewer or reader who establishes an active dialogue with the text and can manipulate its narrative arc and content through his or her activities (see also emergent narrative)
- interface** (inf, med): the medium between a content delivery system and a human, such as a book, smartphone, or computer screen
- linear narrative** (film): a plot structure that unfolds linearly in time
- LMS** (inf, ped): learning management system
- luddites**: English anti-machine movement in the 19th century
- manga** (med): a Japanese comic book
- manhwa** (med): a south Korean comic strip
- mashup** (med): an edit of small parts of several films into a new scene
- media convergence** (med): the interconnected info-communications environment of traditional and new media
- meme** (med): an image-based micro-narrative of cultural codes that circulates on social media platforms
- memoriter** (ped): a text to be memorized word-for-word and then reproduced
- micronarrative** (med): compressed visual, verbal or audiovisual content, such as a meme
- mimetic** (psych): based on imitation
- MOOC** (inf, ped): abbreviation for Massive Open Online Course; an open, online form of education for large numbers of students
- multitasking** (psych): carrying out several activities at the same time
- narration** (lit, film, narr): narrative process and representation
- narrative** (lit, film, narr): a paradigm of thought, interpretation; structuring of signs in a narrative way; verbal, kinetic, pictorial or audiovisual representation
- narrative economics**: analysis of macroeconomic processes through dominant social narratives
- narrative transportation** (lit): the level of experience at which the narrative engages the recipient, who feels that they are part of the story (see also immersion)

- netnography** (ant): internet ethnography; focuses on people's behavior on social media and video-sharing portals
- new media** (med): individual and mass communication using digital tools and the Internet, as well as content delivery that enables user interactivity
- news portal** (med): an online platform that constantly publishes updated news and is operated by a permanent editorial staff
- nonlinear narrative mode** (film, narr): narratives that tell the temporality of the story in a non-chronological order
- opinion bubble** (med): a set of information filtered by artificial intelligence based on the user's interests
- oral history** (ant): narratives of life history preserved in various media (e.g., tapes, videos, or digital archives) in which the narrator describes a historical event or period by recounting his or her own lived experiences and opinions
- pathography** (psych): the history of the illness as told by the patient/client
- phenomenology**: science based on the understanding of directly observable phenomena
- Photo Voice** (ant, ped): art-based participatory research in which participants take photographs of current social problems and then form a narrative based on the images
- photoshopped image** (med): an image that has been modified using *Photoshop* image editing software, usually to an extreme degree
- pitch** (narr): a concise, focused marketing text
- politainment** (med): derived from the words politics and entertainment; refers to tabloidized political communication (usually on social media) that gives provides insight into the personal lives of politicians
- post-truth** (med): political mass communication beyond facts, using the tools of politainment
- premier plan** (film): close-up
- primary source**: the work of art itself
- remixing** (med): the purposeful mixing of digital content in different formats
- responsive interface** (inf): a digital interface that adapts to the user's interactions and devices
- second screen** (inf, med): typically mobile technology; thanks to media convergence, people can sometimes consume and manipulate content using two screens at the same time.
- secondary source**: an analytical study of a work of art
- serial** (film): with the same storyline and a serial narrative
- series** (film): a series of episodes set in the same storyline, but each episode has its own self-contained narrative
- snack culture** (med): the rapid consumption of micronarratives via smart devices
- social media** (med): a multi-functional media platform for individual and community interactions and content sharing

- soft skills** (psych): skills that cannot be precisely measured but are essential in the world of work, such as communication, cooperation and problem-solving
- source recall** (psych): the narrator can recall who the source of a piece of information was and under what circumstances the information came into his or her possession
- spin-off** (film, med): a narrative by-product related to the plot world
- streaming** (med): sharing audiovisual content
- suspense** (film): a technique for maintaining the viewer's attention by providing the viewer with more knowledge or lack of information than the protagonist of the film
- syuzhet** (lit, film, narr): the narrated plot
- tabloidization** (media): the dilution of traditional quality journalism with sensationalist content on public issues
- transportation** (narr): the mental process through which the recipient feels part of the world of the plot and, losing contact with the real world, experiences emotions as a result of the plot
- vlog** (med): a term derived from the fusion of the words video and blog; a channel of audiovisual posts published in series, usually by influencers on a video-sharing portal
- voyeur** (film): the positioning of the viewer as an outsider who still gains insight into the details of the character's life
- VR** (med): virtual reality
- Web 1.0** (med): the first generation of Internet content delivery, which implemented the traditional one-way model of mass communication
- Web 2.0** (med): a newer generation of Internet services, including all the applications on the Internet that allow users to share content and interact individually and socially; typically refers to blogs, content-sharing portals and social media platforms
- Web 3.0** (med): a set of personalized applications and content for networked communication
- World Wide Web** (inf, med): a collection of hyperlinked content on the Internet

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