



# The Innerworkings of Digital Storytelling

André David Daniels, University of the Western Cape, South Africa\*

 <https://orcid.org/0000-0003-4948-220X>

Isabella Margarethe Venter, University of the Western Cape, South Africa

 <https://orcid.org/0000-0001-6554-8024>

## ABSTRACT

Traditionally, storytelling was used for entertainment and the transfer of know-how. The advent of digital media gave rise to new possibilities for telling stories. When the context is, for example, to relay information about how to protect a person from COVID-19, it is referred to as serious storytelling. The main objective of this research was to establish what skills and attributes would be required for someone to autonomously “tell” a serious digital story in a resource constrained environment. A systematic literature review of peer reviewed articles resulted in a knowledge bank of articles. Atlas Ti was used to qualitatively analyse these articles. Even though a resource constrained environment may be a limiting factor for telling a digital story, this research has found that emotional support, digital inclusion, as well as assisting individuals with their devices, can pave the way to autonomous digital storytelling.

## KEYWORDS

affordances, competences, digital affinity, digital inclusion, digital landscape, digital storytelling, ethics

## 1. INTRODUCTION

Storytelling was used through all ages to share traditional knowledge and practice as well as cultural information. As Yilmaz & Ciğerci explained: “*Telling stories is one of the basic qualities of human understanding*” (Yilmaz & Ciğerci, 2019, p. 1). Initially stories were retold orally, but later—when other media became available—it was conveyed as a narrative using text and sometimes visual media such as drawings or photos. The main difference between digital storytelling and paper-based storytelling is that the latter is physical and static whereas digital storytelling is virtual and thus transient. Even though digital videos were used prior to 1993, it was mostly used by digital artists and within the domain of filmmaking, using expensive equipment. The term “*Digital storytelling*” was used to explain to people how to—without computer or filmmaking knowledge—create and digitally record their own short story. With the advances made in technology—and improved access

DOI: 10.4018/IJOPCD.315300

\*Corresponding Author

This article published as an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and production in any medium, provided the author of the original work and original publication source are properly credited.

to smart mobile devices—storytelling has become more accessible to people from all walks of life. Especially those with the know-how and resources to tell these stories.

Currently storytelling is used for entertainment, advertising, as well as in therapy and other serious matters. According to Lambert “*We look forward to a time when cognitive scientists and therapeutic researchers look more closely at the tools of multimedia as an extension of our understanding of art and narrative therapies*” (Lambert, 2013, p. 106).

COVID-19 catapulted the global population into digital mode—and serious digital storytelling—and thus the digital divide and associated disparity of those people without access, resources or the know-how to use technologies, have become more pronounced. The pandemic has expedited the concept of the “*fourth industrial revolution*” which demands skills, access and resources. These will increasingly become a requirement rather than a luxury (Schwab, 2017).

## 1.1 Background and context

The requirements to tell a digital story means that the following needs to be considered: motivation, ability as well as resources. To put it in a nutshell: to be able to tell a digital story ethically and autonomously, the storyteller needs certain digital skills (competences), general skills (such as literacy), digital resources as well as the motivation (digital affinity) to tell the story.

It might be asked what digital skills would be required to tell a digital story? It is the ability to use visual content—such as images and video—and audio content—such as making a recording or using existing audio clips—and the ability to assemble and edit these to create a story. However, what is also required are resources such as a mobile phone, a computer and access to editing, as well as visual and audio software. And obviously the motivation to create such a story either for social media, advertising or for serious matters.

Mobile technology is being used ubiquitously by all and a digital identity and digital memory on social platforms, is often an important component of an individual’s life “*The affordances shared by texting, social media and the interactive storytelling medium have become infrastructural to identity in many youth cultures*” (Proctor & Blikstein, 2019, p. 298).

## 1.2 Terms and concepts explained

To inform the discussion, definitions of all the key terms used in this paper will be provided in this section with reference to the literature. The relationship of these terms are depicted in Figure 1.

### 1.2.1 Digital affinity

It can be considered a person’s interest and motivation to use digital resources. High digital literacy levels do not infer an awareness and interest in digital device utilization (Park, Kim, & Park, 2021).

### 1.2.2 Digital storytelling

The “*story circle*” was coined by Lambert (2013) and entails telling a fragment of a personal experience that will become the foundation of a digital story. The facilitator creates an inclusive environment, to allow all to share their stories and ideas. This enabling environment will allow the creation of a story and the “*story circle*” ends with the viewing and discussion of the story.

Available resources will inform what methodology should be employed to tell a story. Digital curatorship is identifying and selecting digital artefacts to complement the story.

How does serious digital storytelling differ from digital storytelling? According to Artur Lugmayr *et al.* serious storytelling is defined as “*storytelling with a purpose beyond entertainment*” (Lugmayr, Sutenin, Suhonen, Sedano, Hlavacs, & Montero, 2017).

### 1.2.3 Digital landscape

The digital landscape or host environment refers to the digital infrastructure—Internet access, computers, mobile phones etc.—and the human capital to make use of it and encourage it. Thus skills, infrastructure and available technologies comprises the digital landscape (Venter, Craffert, Candi, van Greunen, Veldsman, & Sigurdarson, 2019).

### 1.2.4 Digital skills or competences

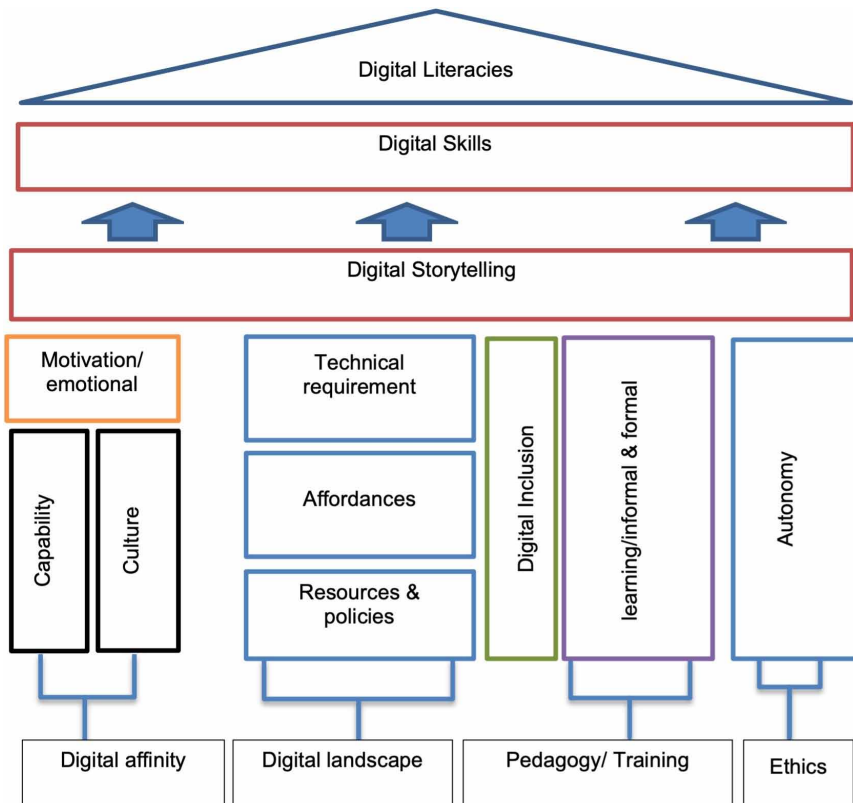
According to Martin & Grudziecki (2006), digital literacy entails: digital competence, digital usage, and digital transformation. Where digital competence includes basic skills as well as analytical skills, the latter referring to higher order thinking skills (Martin & Grudziecki, 2006, p. 256). Digital usage is being able to apply digital competency to domain-specific areas. Whereas digital transformation means the creative use of digital resources to augment or change specific domains (Park, Kim, & Park, 2021). To summarise digital competency, it is the skill or capability to leverage technology to read, write and live in the technological age.

### 1.2.5 Affordances

In general affordance means knowing how to use something when you see it. Alternatively, it can mean: to recognise how to use something creatively. Affordances are based on functional characteristics of an object and observed functionality by the user.

With digital storytelling the storyteller needs to consider which affordances—attributes, characteristics or features—of digital technology he or she can use to engage the audience.

Figure 1. Relationship between defined concepts and terms



Edward Snowden remarked in an interview:

*“If we do not understand the tools and how they work (affordances) it is the tools that use us and not us that use the tools. We can express a desire through them but it is the tools that determine the result of them” (Snowden, 2021).*

### 1.2.6 Digital inclusion

Equality of access to the Internet and technology enables people to improve their lives and livelihoods, since it provides access to useful information and services. Thus, digital inclusion can be defined as the *“adoption of innovation and sustainable infrastructure, which can create employment opportunities, foster the digital economy and generate revenue” (Jamil, 2021, p. 2).*

### 1.2.7 Ethics

In digital storytelling it is important to acknowledge the feelings of the storyteller and it needs to be noted that the permission to use the story is not a once off permission. This is especially so when a person works with vulnerable people.

Gachago contends that *“ethical practice cannot be contained in codes of conduct alone and cannot simply be signed off on by institutional review boards, but is rather a matter of a daily personal, professional and political caring practice” (Gachago & Livingston, 2020).*

### 1.2.8 Autonomy

Is the ability to take charge of one’s own learning. Self-directed learning refers to how students experience independent learning and whether they feel responsible for their participation in their learning. Self-directed learning is a psychological process where a learner purposively gains knowledge and understands problem solving. Self-directed learners will be able to complete set tasks as well as plan and evaluate their learning (Geng, Niu, & Law, 2019).

### 1.2.9 Culture

According to Walters & von Gillern (2018) to be aware of different cultures is a skill required for living in the 21<sup>st</sup> Century since *“it aids in correcting misunderstandings and fosters cooperation” (Walters & von Gillern, 2018, p. 52).* It allows the understanding of different perspectives and diverse opinions of a culturally diverse population.

### 1.2.10 Digital Literacies

Digital literacies can be considered to be context dependent and socially negotiated and ranges on a scale from practical to essential (Guitert, Romeu, & Colas, 2020)

A generic definition of digital literacy—sometimes referred to as e-literacy—is:

*“The ability of individuals to use digital tools and facilities to perform tasks, to solve problems, to communicate, to manage information, to collaborate, to create and share contents and to build knowledge, in all areas of everyday life and for work” (Venter, et al., 2019, pp. 33-34)*

## 1.3 Aims and objectives

South Africa is placed by the Network Readiness Index—in terms of its economic development (Gross Domestic Product (GDP) per capita)—between the *“lower-middle income”* and *“upper-middle income”* group indicating that it has the characteristics of both an advanced and a developing economy (Portulans Institute, 2020). This is more pronounced in the cities where highly advanced technological infrastructure can be found in some areas of the city whereas

even the most basic technologies are lacking in other areas. Although many South Africans have access to mobile technologies such as smartphones—the means for development of digital stories—the cost of data as well as the device is prohibitive for low-income communities (Venter, *et al.*, 2019). In general, South Africa is still economically and educationally divided in terms of e-skills. Digital storytelling has been shown to be a strategy for developing e-skills (Venter & Daniels, 2020).

The main purpose of this investigation thus, was to establish: What skills and attributes would encourage the autonomous telling of a digital story in a resource constrained environment?

This translates into the following sub-questions:

1. What factors influence the competencies—personal attributes—and competences—skills—needed to tell a digital story?
2. What digital environment encourages the autonomous telling of a digital story?
3. How should the necessary skills be acquired?

A systematic literature review was conducted to determine what the most important aspects are that need to be in place to be able to autonomously tell a digital story. It was found that to support the storyteller emotionally within a digitally inclusive environment and with the necessary assistance to find appropriate information, will allow the storyteller to autonomously tell a digital story.

## 2. RESEARCH APPROACH

All research builds on existing knowledge, and it is a priority for academics to know about previous research. However, this has become increasingly complex since knowledge production is accelerating in all fields making it difficult to keep abreast of the state-of-the-art research.

### 2.1 Theoretical underpinnings

Grounded theory, hermeneutics, and critical social theory were used as lenses to understand results from the literature review. These methodological lenses will be described in this section.

#### 2.1.1 Grounded Theory

It is a methodology for developing theory inductively grounded on empirical data gathered systematically. This methodology could be initiated with research questions or with the collection of qualitative data. When analysing the data, ideas and concepts are said to “*transpire*” from the data (Strauss & Corbin, 1994).

#### 2.1.2 Hermeneutics

Gadamer, is of the opinion that understanding a text is always within a socio-historical as well as cultural context, irrespective of a specific standpoint. In Gadamer’s words, “*the standpoint beyond any standpoint ... is pure illusion*” (Gadamer, 1976, p. 376). One of Gadamer’s core contributions to the field of hermeneutics is the interpretation of “*the merger of horizons*”. According to him, it is where the reader “*meets*” the text and how the reader interprets the text, either expands or shrinks the reader’s worldview.

The Gadamer “*horizon*” can also be explained using the Johari Window-concept. The Johari Window is a model for the awareness of bias—both conscious and unconscious—which increases the understanding of self and others.

### 2.1.3 Critical Social Theory and the Knowledge interests of Habermas

“Critical social theory is a school of thought which has as its primary objective the improvement of the human condition” (Ngwenyama, 1991, p. 268).

Critical social theory assumes that:

1. People have the ability to transform their world.
2. Knowledge of society is not without value.
3. Reason and critique are inextricably linked.
4. Theory and practice are interrelated.
5. Praxis requires reason and critique to be reflexive

Based on these assumptions Habermas (Habermas, 1971) identified three knowledge interests which he suggests drives all human enquiry, these are: (1) technical; (2) practical; and (3) emancipatory (see Table 1).

The *technical knowledge interest* considers the human need to predict and control the natural world. Its products are technology and scientific knowledge.

The *practical knowledge interest* centres on understanding culture and thus, social behaviour. Its products include social consciousness and humanity.

The *emancipatory knowledge interest* considers technology and society in terms of its mental and physical constraints. The product of the emancipatory knowledge interest is the establishment of norms for social justice and the enhancement of human freedom.

Each type of knowledge interest can be used as a reference for researchers to grasp the world whilst seeking to obtain knowledge about it (Ngwenyama, 1991).

## 2.2 Methodology

In general, a research methodology can be described as a series of steps to solve a problem. A systematic literature review is the systematic analysis, interpretation and evaluation of the existing body of knowledge. The systematic literature review allows researchers to identify patterns within the results of published articles in order to understand and appreciate the complexity of existing knowledge and to identify the gaps that exist in order to consider further research. It is important to consider academic publications since they form the fundamental corner stones for the creation of new knowledge. The systematic literature review followed in this research consisted of five stages (see Figure 2).

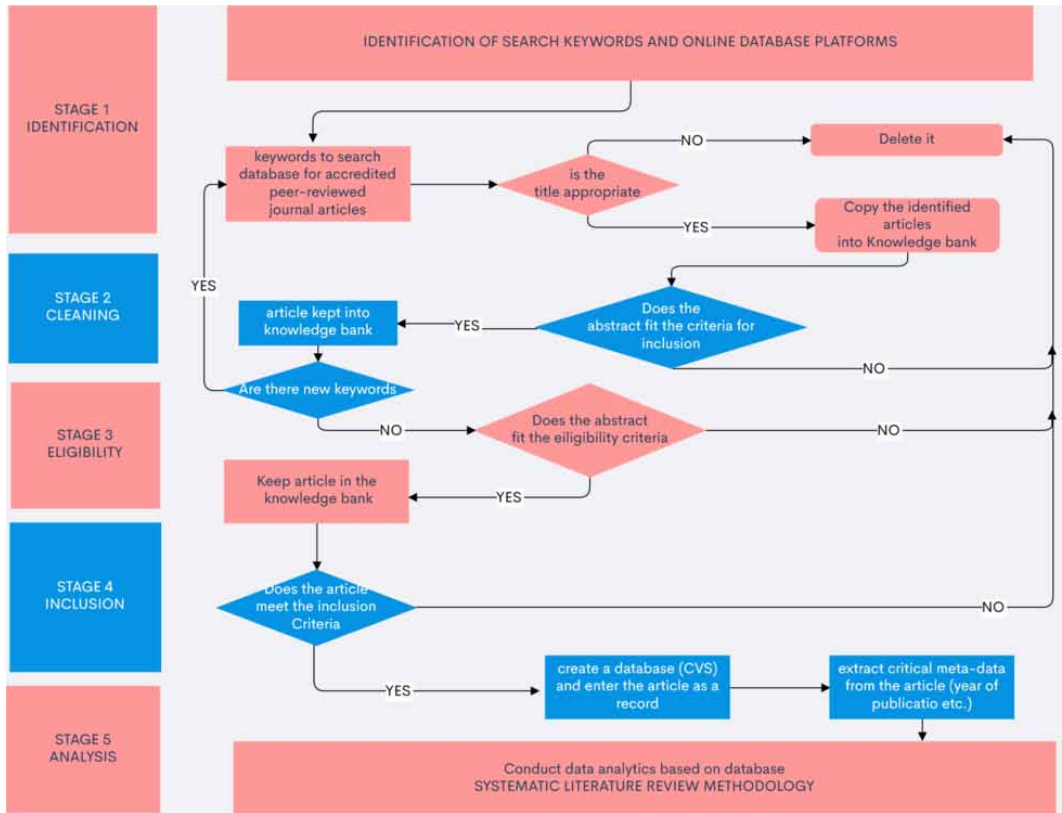
Stage 1 Identification: For this stage keywords are used to search for peer reviewed journal articles.

If the title of the article is appropriate the article is added to a knowledge bank.

Table 1. Habermas' fundamental human knowledge interests adapted from (Ngwenyama, 1991)

Knowledge Interest	Object of Interest	Orientation	Knowledge Products
Technical	Natural World	Prediction	Scientific Knowledge
		Control	Technology
Practical	Social Relations	Mutual understanding	Social Consciousness
	Tradition		Humanity
Emancipatory	Technology	Social Criticism	Norms for Justice
	Social Relations		Freedom

Figure 2. Systematic literature review methodology adapted from (Dandajena, Venter, Ghaziasgar, & Dodds, 2020)



Stage 2 Cleaning: Here the abstract of the article is read, if it is relevant it is kept else the article is deleted. If new keywords are identified, Stage 1 is repeated with these new keywords.

Stage 3 Eligibility: If the abstract fit the eligibility criteria—a recent publication or highly cited—it is kept else it is deleted.

Stage 4 Inclusion: If the content of the article is relevant for the research questions posed, it is kept, else it is deleted.

Stage 5 Analysis: Create a database for analysis.

### 2.3 Data collection

In Stage 1, nine keywords were identified (see Table 2) and these were used with ERIC, Google Scholar, and Emerald etc. as portals, online platforms or repositories, to search for peer reviewed articles. If the title was considered appropriate it was added to a knowledge bank of relevant articles. A total of 157 articles comprised the knowledge bank.

During Stage 2, the abstracts of these articles were read to determine if the content is appropriate for inclusion (in terms of the chosen keywords) if not, the article was discarded, else it was kept. Using a grounded theory approach, if new keywords were identified during the search process, Stage 1 was executed again and the new keywords were used to search for more articles. Eight new keywords were added and used to identify more articles. On completion of Stage 2, 102 articles were selected.

In Stages 3 and 4 the eligibility of these articles was based on the year of publication (the last three years) or a high number of citations. Thus 41 articles were considered, these were published

Table 2. Summary of the keywords and number of articles included

Stage 1		Stage 2	Stage 3 & 4	
Initial keywords	Subsequent keywords	Number of articles identified	Number of articles kept, based on its abstract	Eligible based on date and Citations
Digital affinity		8	2	2
	Affinity spaces	8	5	3
Digital storytelling		22	12	2
Digital landscape		10	7	2
Competencies		6	3	2
	Smart education	8	4	1
	Mobile technologies	11	4	2
	Digital literacies	15	10	6
Affordances		12	7	2
	Autonomy	3	3	3
	Digital readiness	6	6	3
Digital inclusion		9	9	2
	Trans-literacies & multi-modalities	7	6	2
Ethics		6	5	1
	Digital curatorship	9	6	2
	Digital pedagogy	6	4	2
	Skills (competences)	11	9	4
Totals	17	157	102	41

between 2018—2020. Only two articles older than 3 years were included, one because of its high number of citations the other because of its specific relevance to a resource constrained environment.

For Stage 5 we read the articles and decided on what sections of the articles should be used in *Atlas Ti 9* to determine codes based on how well it informed our research questions. To keep track of the stages an excel database (knowledge bank) of the meta data of each article—such as, year published etc.—was created.

## 2.4 Process of preparing for data analysis using *AtlasTi 9*

Initially it was decided to use the *Cloud based Atlas Ti 9*, as it would allow on-line collaboration between the authors especially seeing that during the COVID-pandemic it was not possible to work face-to-face. However, the Cloud-based software did not have all the functionalities of the desktop version thus it was decided to rather use the latter. The subsequent collaboration between authors was then achieved via sharing screens using conferencing applications such as Skype or Zoom. A pilot study was conducted to consider the options for collating the articles (*documents*).

Subsequently the 41 identified articles were shared between the authors and each read their allocated articles for relevant and interesting text. The text was then highlighted in the article (*document*) before loading the document into *Atlas Ti 9*. Seventeen document groups were created—based on the 17 keywords (see Table 2)—and the documents were then loaded into the appropriate document groups.

The authors collaborated on assigning *codes* to the highlighted text of each article. Initially the 17 keywords were used as *codes* but a further 16 new *codes* (see Table 3) were added, to describe text of interest, thus again applying grounded theory.



To address the main research question, namely:

What sort of environment would encourage the autonomous telling of a digital story in a resource constrained environment? *Code groups* were created to address the pertinent aspects of the sub-questions which would—when answered—address the main research question (see words underlined in the three sub-questions below).

1. What factors influence competencies—personal attributes—and competencies—skills—needed to tell a digital story?
2. What digital environment encourages the autonomous telling of a digital story?
3. How should the necessary skills be acquired?

**Table 3. Code groups and related codes**

Code-Groups	Key-words (codes)	New codes
Research Question 1 (RQ1)		
Technical requirements	Digital landscape	Policies & definitions
	Digital inclusion	
Resources	Mobile technologies	
	Affinity spaces	
Digital story	Digital storytelling	Community
	Curatorship	Digitization
	Ethics	Feedback
		Context
Independently	Affordances	Empower
	Autonomy	
Research Question 2 (RQ2)		
Personal Attributes	Competencies	Awareness
	Digital affinity	Culture
		Motivation
		Participation
Capabilities	Digital literacies	Knowledge sharing
	Digital readiness	Tool selection
	Skills (competences)	Design
		Communication
		Collaboration
Research Question 3 (RQ3)		
Skills Acquisition	Smart education	Training
	Digital pedagogy	
	Trans literacies	
<b>Total</b>	<b>17</b>	<b>16</b>

### 3. RESULTS

The analysis was done qualitatively using the methods provided by *Atlas Ti 9*, for example, to count the number of times a word or expression was used. The authors considered the code groups and the keywords (codes) that describe the questions (see Table 3) and used *Atlas Ti 9* to create networks forming a visual representation of these networks (Figures 3, 5 and 7). The dotted lines that connect the code-groups and codes were created through the coding process. The linkages (solid lines in the figures) were added during the network creating phase. The linkages will be emphasized by specific quotes and in terms of each research question.

In the following section, code groups are depicted in uppercase.

RQ1: What factors influence competencies and competences needed to tell a digital story?

As can be seen in Figure 3, competencies, culture, digital literacies and motivation are the codes that appear most frequently in the literature. These will now be discussed in more detail.

Code density is when more codes are linked by the researchers to one another whereas groundedness is the number of times the code (code frequency) was referenced in the literature.

When considering CAPABILITIES (see Figure 4) it is interesting to note that design/methodology/approach—which according to Walters & von Gillern (2018) determines the unpacking of the digital design process of video production—can develop critical digital literacy skills, also referred to as competencies. Competencies is a prerequisite for digital readiness and academic engagement (participation).

Therefore, digital readiness is influenced by motivation which encourages participation—we equated it with academic engagement—in turn, participation enables collaboration.

It is important to understand culture in terms of thought, language, behaviour, values, ethnicity and nationality (Walters & von Gillern, 2018) and thus the influence it has on digital readiness. Culture impacts the readiness of people to accept the digital environment and use it to their advantage.

ATTRIBUTES such as knowledge sharing, develops and fosters awareness.

RQ2: What digital environment encourages the autonomous telling of a digital story?

Figure 3. Groundedness and density of the codes relevant to factors that influence competencies

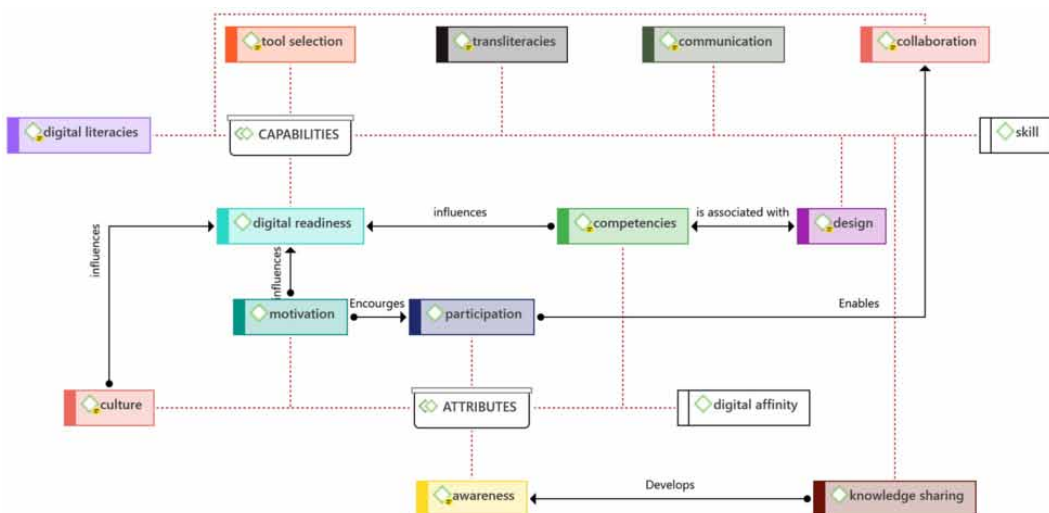
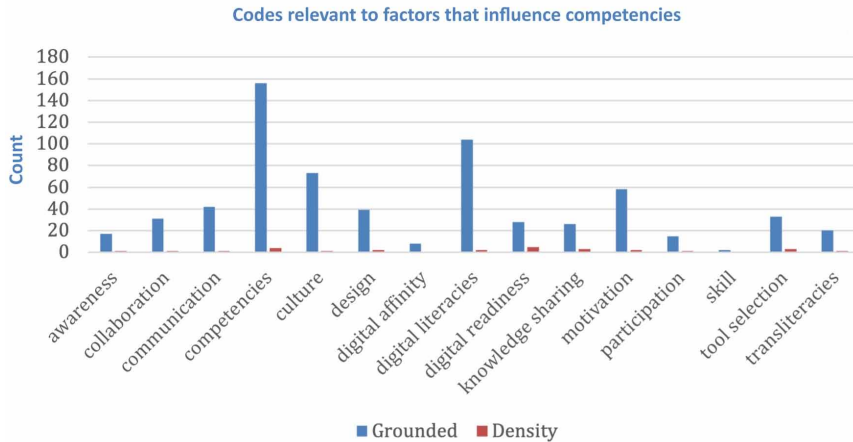


Figure 4. Network showing the linkages for factors that influence competencies



Surprisingly autonomy is not mentioned frequently within the literature however as can be seen in Figure 5, policies, digital landscape, digital inclusion and affordance are the codes that appear most frequently which refers to the environment that will encourage autonomy. The most prominent codes will be discussed in terms of its linkages (see Figure 6).

When considering technical requirements (encompassing digital landscape and digital inclusion), it can be seen that policies inform the digital landscape (see Figure 6).

Digital inclusion means people from all walks-of-life have access to the digital landscape or environment of the country and has the means as well as the skills to adopt it. *“The access to technological means and their safe use allows to some extent, the reduction of social and cultural inequalities, creating an independent learning environment that enhances the social inclusion of all individuals”* (Bamicha, & Drigas, 2022, p. 149).

According to Radovanović *et al.* obtaining digital skills is the human capital required for opportunities in sustainable development (Radovanović, Holst, Belur, Srivastave, Hounghonon, Le Quentrec, Militza, Winkler, & Noli, 2020). They are of the opinion that to be digitally included the three levels of the digital divide—which comprises: Internet access; digital literacies and competencies; as well as the “divide in life opportunities and benefits gained from the first two”—need to be addressed (Radovanović, et al., 2020, p. 152). As can be seen from the diagram digital inclusion is closely linked to the digital landscape which refers to skills, infrastructure and available technologies—these are reflective. When considering digital inclusion it is associated with ethics since digital inclusion requires moral and ethical consideration (Gachago & Livingston, 2020). To participate in everyday life in the 21st century, it is imperative to have access to virtual environments, the resources (such as smartphones, etc.) as well as the ability to utilize it.

When considering RESOURCES (which encompasses policies, mobile technologies and affinity spaces) the affordance of mobile technologies allows digital storytelling and is associated with affinity spaces. To tell a digital story the storyteller should consider the digital technology’s affordance as said affordance can influence, challenge or perpetuate the status quo or power balance of the digital environment (Walters & von Gillern, 2018). Digital environments such as affinity spaces enable the community to share in digital stories. According to Magnifico *et al.* when the storyteller does not seek out their own experiences in an online space, they do not understand “the broader patterns of participation” (Magnifico, Lammers, & Fields, 2018, p. 148).

RESOURCES and the digital landscape has a direct effect on how Independently or autonomously a digital story can be told.

Figure 5. Groundedness and density of the codes relevant to the digital environment that encourages autonomous digital storytelling

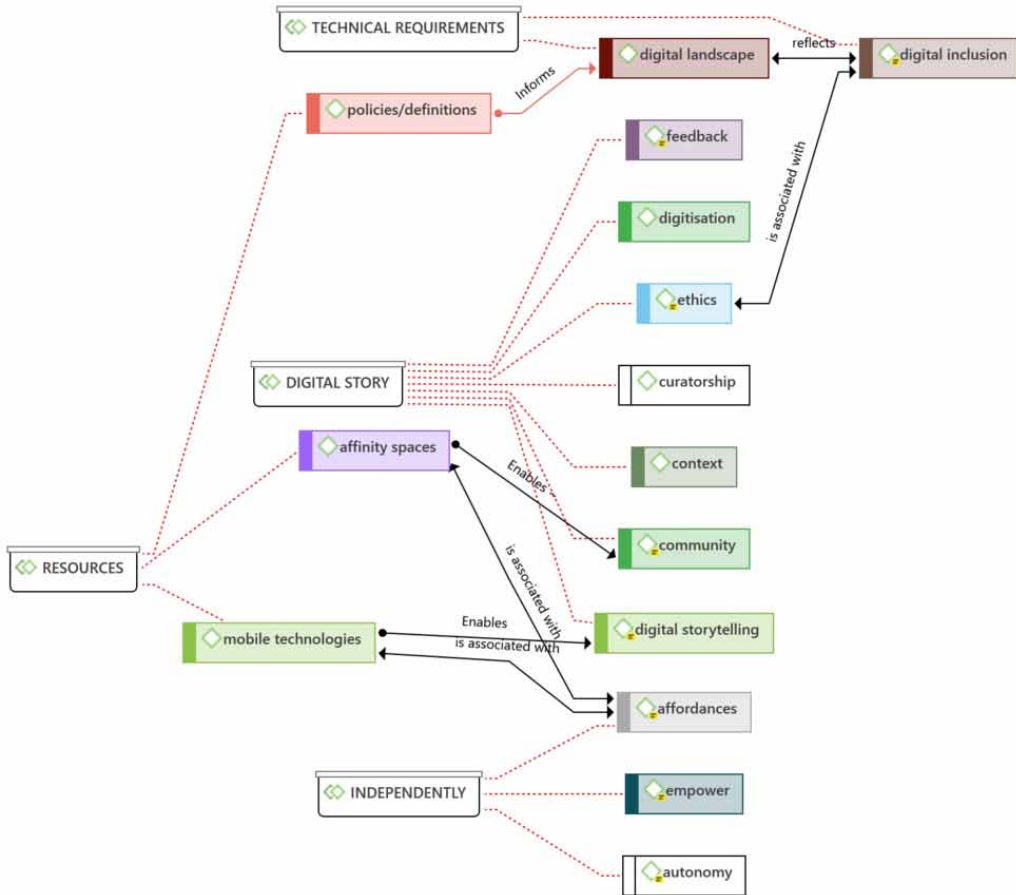
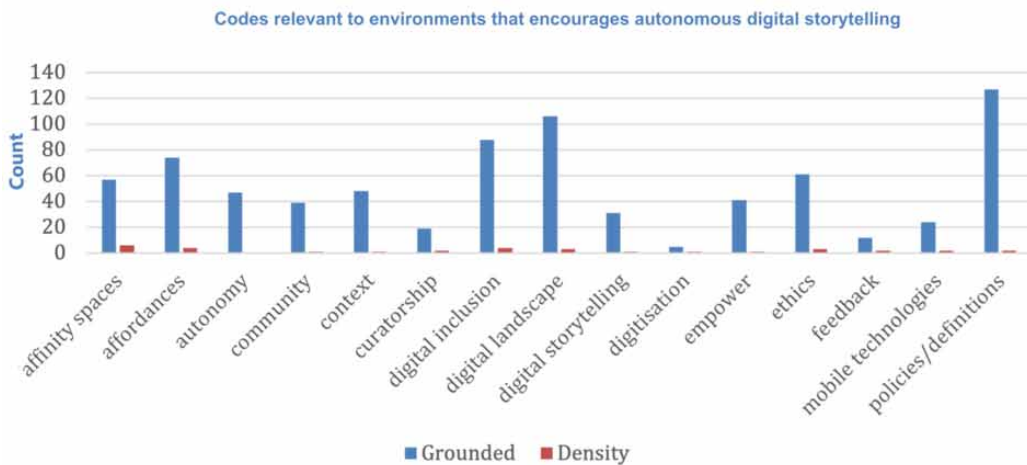


Figure 6. Network showing the linkages for what digital environment encourages autonomous digital storytelling



RQ3: How should the necessary skills be acquired?

In Figure 7, policies, digital landscape, digital inclusion and affordance are the codes referred to most frequently in the literature considered.

According to Ferreira *et al.* in terms of skills acquisition (see Figure 8) students are more motivated when using mobile technologies, which leads to participation and collaboration and ultimately students are not taught skills but acquire it organically. *“Collaborative actions and cooperation between student/student, student/teacher and student/class are increased when mobile devices are used in the classroom context”*. For effective use of mobile tools it is important to understand its application which has implications for training *“not only for the use and application of technology, but for the underlying concepts and support”* (Ferreira, Moreira, Santos-Pereira, & Natércia, 2015, p. 4600).

Smart education, enables flexible and efficient learning by individuals and has recently become popular in terms of training (Meng, Jia, & Zhang, 2020). Digital pedagogy develops transliteracies or multi-literacies. *“Transliteracies brings to the fore the construction of social relations across borders as people engage in mobile literacy practices, illuminating ways that power manifests in everyday activity which simultaneously creates and constrains opportunity”* (Schmier, 2019, p. 96). Proctor & Blikstein indicates that *“If we want to support youth in self-authorship, critical agency*

Figure 7. Groundedness and density of the codes relevant to how the necessary skills should be acquired

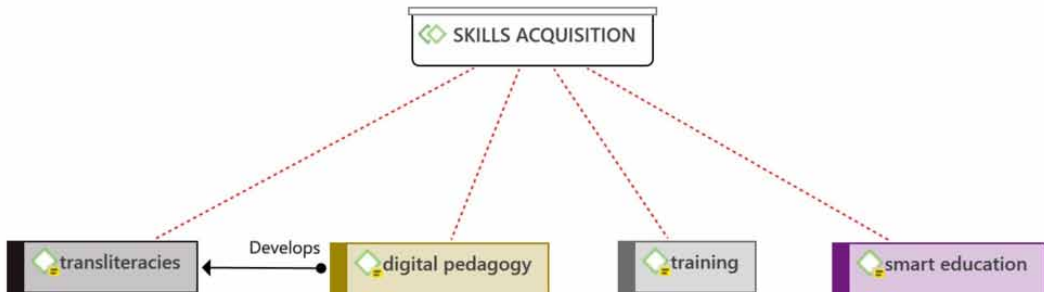
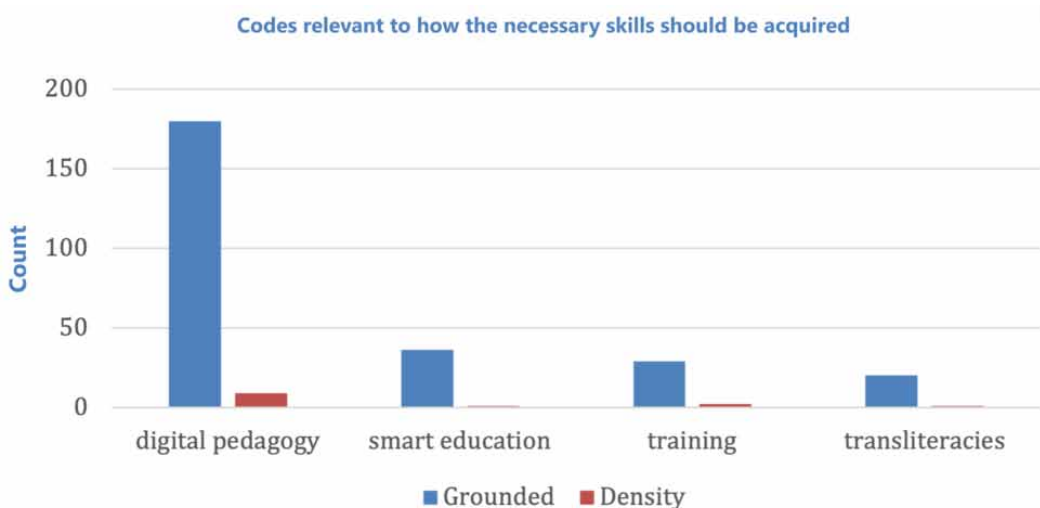


Figure 8. Network showing the linkages for how the necessary skills should be acquired



*and participation in designing socio-technical futures, it is imperative that our schools cultivate critical computational literacies which centre the lives and identities of the community”* (Proctor & Blikstein, 2019, p. 303).

#### **4. DISCUSSION AND CONCLUSION**

The aim of the study was to determine what skills and attributes would encourage the autonomous telling of a digital story in a resource constrained environment? To revisit the research questions:

RQ1. [Digital Affinity] What factors influence competencies—personal attributes—and competences—skills—needed to tell a digital story?

RQ2. [Digital Landscape] What digital environment enables the autonomous telling of a digital story?

RQ3. [Pedagogy/training] How should the necessary skills be acquired?

Figure 9 presents all the constructs used within the research study and how they relate to one another as well as what factors interlink these constructs. These are: emotional support, digital inclusion, instrumental and informational support.

Digital literacies encompass all the constructs used in the research study. All of these constructs require basic computer and mobile skills and are necessary to be able to tell a digital story autonomously. Grounded theory revealed the constructs associated with the digital storytelling process (depicted in the blue square in Figure 9).

In the following sections the research questions will be revisited using the theoretical underpinnings—critical social theory and hermeneutics—as lenses.

##### **4.1 Digital affinity (RQ1) through the lens of critical social theory.**

It is not a given that all individuals with the necessary capability and competencies to use mobile devices or computers will be interested and motivated to do so, in their everyday lives (Park, Kim, & Park, 2021). According to the technical knowledge interest as defined by Habermas (Habermas, 1971), harnessing technology is dependent on the need of users to control their environment. Habermas, through his definition of the practical knowledge interest, also indicates that culture impacts usage. Emotional support assists with the mental and physical constraints such as technophobia, reflecting the emancipatory knowledge interest of Habermas. Thus, there is no direct correlation between high digital affinity and ability to use digital devices.

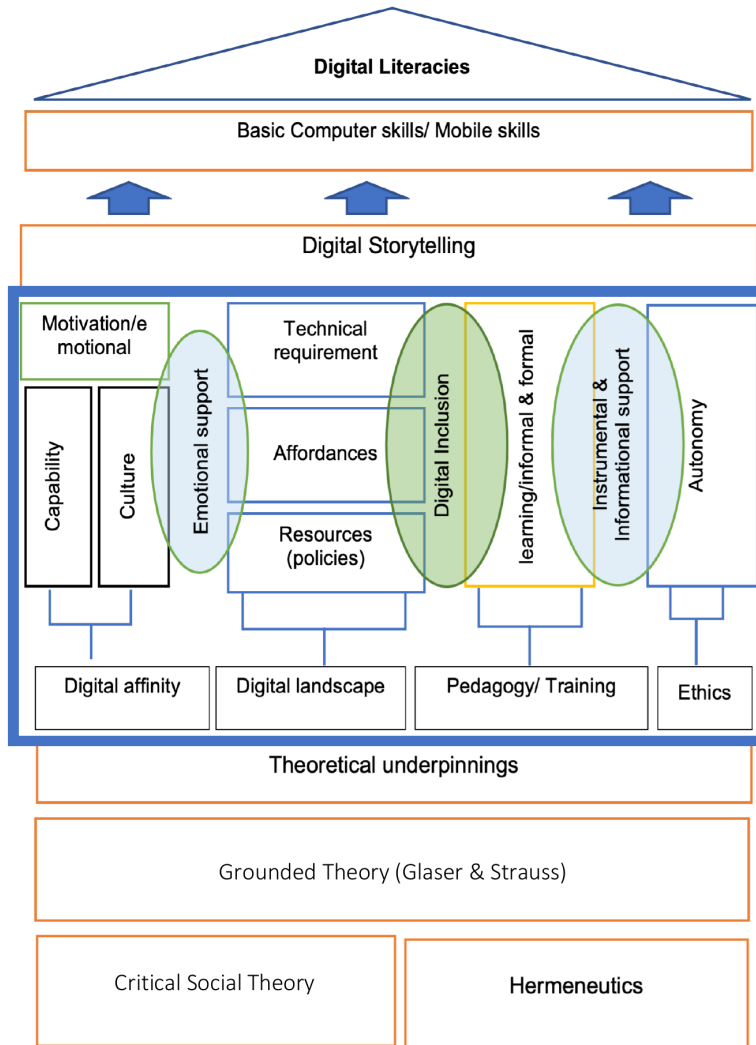
##### **4.2 Digital landscape (RQ2) through the lens of critical social theory.**

The digital landscape implies connectivity, data, storage and digital devices. Policies determine how these resources will be provided, implemented and used, and is thus a reflection of the technical knowledge interest of Habermas (Ngwenyama, 1991). Affordance is the perceived usability of the device by the user—Habermas’ practical knowledge interest—which centres on understanding social behaviour and the culture of the user. It is important to be creative when presented with unexpected phenomena while dealing with under-resourced communities. However, leveraging the affordances of devices requires flexibility (Venter & Daniels, 2020). An inclusive digital landscape is emancipatory, and will allow users from diverse backgrounds, even a resource constrained environment, to effectively capitalize on it—reflecting the emancipatory knowledge interest of Habermas (Habermas, 1971; Bamicha, V., & Drigas, A. 2022).

##### **4.3 Pedagogy and training (RQ3) through the lenses of hermeneutics and critical social theory**

In this research, the term pedagogy refers to teaching of theory and practice informed by the educator’s “worldview” (Gadamer, 1976). Whereas training can be considered teaching or developing skills

Figure 9. Viewing results using grounded theory, hermeneutic and knowledge interests as lenses



relating to required competencies. Formal learning is usually achieved in a formal setting such as a classroom or laboratory whereas informal learning happens while exposed to everyday activities away from formal learning settings. It is informal learning—sustained by instrumental and informational support—that increases the understanding of self and the environment. Ethical considerations require an understanding based on the socio-historical as well as cultural context, according to Gadamer. Autonomy relates to Gadamer’s interpretation of the “expanding worldview”—such an expanded world view will allow the storyteller the freedom to independently tell a digital story.

#### 4.4 Limitations

The number of articles which were analysed could be a limiting factor. The choice of articles depended on the keywords which could also limit and impact the scope of the study. Furthermore, the timeframe 2018 – 2021 as well as the fast-changing digital environment, is another limitation.

In addition, it is possible that the researchers may have overlooked synonyms or similar constructs during the coding process.

#### **4.5 Recommendation**

Emotional support, digital inclusion as well as instrumental and informational support creates an enabling environment for the synergistic interplay of digital affinity, digital landscape and pedagogy. Thus, for digital storytelling it is important to embrace the human capital of the individual—thus their skills, knowledge, and experience should be viewed in terms of its value during the process of digital storytelling. A resource constrained environment is not necessarily a limiting factor for telling a digital story if it is accepted that individuals will have access to a variety of digital devices and come with different sets of expertise or skills.

#### **ACKNOWLEDGMENTS**

The Common Good First project for creating this opportunity and for the funding to conduct workshops, the University of the Western Cape and the National Research Foundation of South Africa (Grant Number 145981) for financial support.



## REFERENCES

- Bamicha, V., & Drigas, A. (2022). The evolutionary course of theory of mind—Factors that facilitate or inhibit its operation & the role of ICTs. *Technium Social Sciences Journal*, 30, 138–158. doi:10.47577/tssj.v30i1.6220
- Dandajena, K., Venter, I. M., Ghaziasgar, M., & Dodds, R. (2020). Complex sequential data analysis: A systematic literature review of existing algorithms. In *Proceedings of the Conference of the South African Institute of Computer Scientists and Information Technologists*, (pp. 44-50). SAICSIT. doi:10.1145/3410886.3410899
- Ferreira, M. J., Moreira, F., Santos-Pereira, C., & Natércia, D. (2015). The role of mobile technologies in the teaching/learning process improvement. In *Proceedings of ICERI2015 Conference*, (pp. 4600-4610). ICER.
- Gachago, D., & Livingston, C. (2020). The elephant in the room: Tensions between normative research and an ethics of care for digital storytelling in higher education. *Reading and Writing*, 11(1), 1–8.
- Gadamer, H.-G. (1976). *Philosophical Hermeneutics*. University of California Press.
- Geng, S., Niu, B., & Law, K. M. (2019). Investigating self-directed learning and technology readiness in blending learning environment. *International Journal of Educational Technology in Higher Education*, 16(1), 1–22. doi:10.1186/s41239-019-0147-0
- Guitert, M., Romeu, T., & Colas, J.-F. (2020). Basic digital competences for unemployed citizens: Conceptual framework and training model. *Cogent Education*, 7(1), 1–20. doi:10.1080/2331186X.2020.1748469
- Habermas, J. (1971). *Knowledge and Human Interests*. Beacon Press.
- Jamil, S. (2021). From digital divide to digital inclusion: Challenges for wide-ranging digitalization in Pakistan. *Telecommunications Policy*, 45(8), 1–16. doi:10.1016/j.telpol.2021.102206
- Lambert, J. (2013). *Digital Storytelling: Capturing Lives, Creating Community*. Routledge. doi:10.4324/9780203102329
- Lugmayr, A., Sutenin, E., Suhonen, J., Sedano, C. I., Hlavacs, H., & Montero, C. S. (2017). Serious storytelling—A first definition and review. *Multimedia Tools and Applications*, 76(14), 15707–15733. doi:10.1007/s11042-016-3865-5
- Martin, A., & Grudziecki, J. (2006). DigEuLit: Concepts and tools for digital literacy development. *Innovation in Teaching and Learning in Information and Computer Sciences*, 5(4), 249–267. doi:10.11120/ital.2006.05040249
- Meng, Q., Jia, J., & Zhang, Z. (2020). A framework of smart pedagogy based on the facilitating of high order thinking skills. *Interactive Technology and Smart Education*, 17(3), 251–266. doi:10.1108/ITSE-11-2019-0076
- Ngwenyama, O. K. (1991). The critical social theory approach to information systems: Problems and challenges. In H.-E. Nissen, H. K. Klein, & R. A. Hirschheim (Eds.), *Information Systems Research: Contemporary Approaches and Emergent Traditions* (pp. 267–280). NorthHolland.
- Portulans Institute. (2020). *The Network Readiness Index 2020 Accelerating Digital Transformation in a post-COVID Global Economy*. Portulans Institute.
- Proctor, C., & Blikstein, P. (2019). Unfold studio: Supporting critical literacies of text and code. *Information and Learning Sciences*, 120(5/6), 285–307. doi:10.1108/ILS-05-2018-0039
- Radovanović, D., Holst, C., Belur, S. B., Srivastava, R., Hounbonon, G. V., Le Quentrec, E., Militza, J., Winkler, A. S., & Noli, J. (2020). Digital literacy key performance indicators for sustainable development. *Social Inclusion (Lisboa)*, 8(2), 151–167. doi:10.17645/si.v8i2.2587
- Schmier, S. (2019). The myth of sharing publicly as 21st century literacy: A case study of a Bangladeshi-American girl's mobile literacy practices. *International Journal of Information and Learning Technology*, 36(2), 94–103. doi:10.1108/IJILT-06-2018-0065
- Schwab, K. (2017). *The Fourth Industrial Revolution*. Crown Business.
- Snowden, E. (2021). *MOOC CRDA: Children's rights in the age of hyper-surveillance*. Youtube. [https://www.youtube.com/watch?v=6\\_3JcFr6DcY](https://www.youtube.com/watch?v=6_3JcFr6DcY)

Strauss, A., & Corbin, J. (1994). Grounded theory methodology: An overview. In N. K. Lincoln & Y. S. Denzin (Eds.), *Handbook of Qualitative Research* (pp. 273–285). Sage Publications.

Venter, I. M., Craffert, L., Candi, M., van Greunen, D., Veldsman, A., & Sigurdarson, H. T. (2019). *WP 2: Diagnosis of the Digital Landscape in South Africa—Skills, Infrastructure and Available Technologies*, <https://www.commongood.erasmus.eu/project/common-good-first>.

Venter, I. M., & Daniels, A. D. (2020). Towards bridging the digital divide: The complexities of the South African story. In *14th Annual International Technology, Education and Development Conference*, (pp. 3250-3256).

Walters, L. M., & von Gillern, S. (2018). We learn in the form of stories: How digital storytelling supports critical digital literacy for pre-service teachers. *International Journal of Digital Literacy and Digital Competence*, 9(3), 12–26. doi:10.4018/IJDLDC.2018070102

Yilmaz, R., & Ciğerci, F. M. (2019). A brief history of storytelling. In R. Yilmaz, M. Erde, & F. Resoloğlu (Eds.). *Advances in Media and Entertainment and the Arts*. IGI Global. doi:10.4018/978-1-5225-5357-1.ch001

*André Daniels is the Digital Media Coordinator in the Centre for Innovative Education and Communication Technologies (CIECT) at the University of the Western Cape (UWC), South Africa. He has more than 25 years' experience of working in Higher Education. He holds a Master's degree in Academic Development and is involved with student and staff training and development as well as the production of multimedia content for face-to-face and online teaching and learning. He specializes in video production and digital storytelling. Blog: <http://www.Tektiks.blogspot.com>*

*Isabella M Venter is an Emeritus Professor in Computer Science at the University of the Western Cape, South Africa and currently the Chair of the Management Committee of the Telkom/Aria Technologies Africa Centre of Excellence. Her research interests include: computer science education, human computer interaction and information communication technologies for development (ICT4D). She has published extensively in accredited national and international conferences and journals. Email: [iventer@uwc.ac.za](mailto:iventer@uwc.ac.za)*