



# Using digital storytelling to externalise personal knowledge of research processes: The case of a Knowledge Audio repository



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## ABSTRACT

While articulation gap describes skill deficiencies displayed by university entrants emerging from underperforming schools, the high attrition and articulation gap at postgraduate levels demonstrate inadequacies of the entry-level intervention programmes implemented to address these challenges. Since inadequate socialization into postgraduate research and limited supervisor support contribute to the articulation gap and attrition rates at South African universities, digital storytelling (DST) potentially addresses these challenges. DST tends to foreground rigorous research, script writing, collective engagement and public expression of subdued voices to ensure effective participation in higher education. The research explores the potential of DST to externalize personal knowledge among postgraduate students at a South African university. It employs a Knowledge Audio Repository (KAR) for the generation and archiving of knowledge for future access and reuse. Findings suggest that DST is ideal for information generation, collaborative engagement and tracking of the developmental trajectory of postgraduates involved in cognitively-demanding research activities.

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## 1. Introduction

One of the widely debated challenges in South African higher education (SAHE) is the articulation gap (Academy of Science of South Africa (ASSAf), 2010; Fisher & Scott, 2011; Hendricks & Volbrecht, 2003; Scott, 2007; South African Department of Education (DoE), 1997). The articulation gap describes South African high school students' lack of sound academic foundations for tertiary studies, which negatively affects their ability to respond positively to higher education programmes irrespective of their academic giftedness (Scott, 2007). These foundational skills include critical thinking skills, analytical skills, sound judgement and a deep grasp of academic content. It is often assumed that academically underprepared students' participation in academic development programmes, their graduation and enrolment in postgraduate studies bears testimony to their possession of solid research skills as well as the eradication of their academic "deficiencies." This deficiency model for explaining the articulation gap uncritically absolves higher educational institutions of the blame for student inability to participate in higher education effectively. The approach fails to recognise sufficiently the role of supervisor student academic relations in postgraduate students' effective engagement in higher education. The deficiency model is also shortsighted in its assumption that underprepared students'

completion of studies and progression to postgraduate study are sufficient proof of their acquisition of solid research skills.

The recurrence of the articulation gap at postgraduate levels is self-evident in limited academic participation, extended times to graduate and high dropout rates in SAHE at this level of study. For instance, a growing body of work provides converging evidence for high attrition rates at postgraduate levels especially Masters and doctoral levels in South Africa (Academy of Science of South Africa (ASSAf), 2010; Essa, 2010; Lessing & Schulze, 2002; Mdyogolo, 2012). This suggests the continuance of the articulation gap even at postgraduate levels. A Consensus Report compiled by ASSAf (2010) highlights that although the attrition rate at doctoral level in South Africa is presumably high, there are no measures in place currently for determining it accurately let alone explain its prevalence. This is due to a lack of certainty and consensus on the direct causes of these attrition rates. However, there is increasing consensus on the role of the articulation gap in explaining attrition at postgraduate levels.

One of the effective ways of addressing the articulation gap and attrition challenges is the utilisation of new technologies such as digital storytelling (DST) to foster rich, meaningful learning experiences for postgraduates. Malita and Martin (2010) define DST as a modern expression of the ancient art of storytelling that combines narratives with digital content, including images, sound and video with a view to empower students marginalised by educational disadvantage to find their voice and to speak out. For students from previously disadvantaged backgrounds who lack confidence in public speaking, display low self-esteem and limited linguistic competence, DST, therefore, provides a

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self-empowering platform for the articulation of research knowledge and sharing of personal experiences of conducting research. Hung, Hwang, and Huang (2012) contend that DST promotes student motivation and concentration on the learning tasks and provides a way to guide them in the organisation of their knowledge. It enables the articulation of complex matters in more accessible ways (Van Gils, 2005), recruits and retains the attention of the audience (Malita & Martin, 2010) through the presentation of information in an interesting narrative (Rijnja & Van der Jagt, 2004). The dialogic and relational nature of DST enables the storyteller to connect to the audience through public articulation of personal narratives and adjustment of her story to fit the context and life worlds of the listeners. The aforementioned affordances of DST make it a viable intervention for increasing student meaningful participation in SAHE, breaching the articulation gap and addressing the challenges of attrition.

Mindful of the communicative and empowering value of DST for South African postgraduates affected by the articulation gap and attrition, this study explores the potential of DST to leverage the externalisation of tacit and procedural knowledge of research by previously disadvantaged postgraduate students to ensure their effective academic participation in university. As such, the paper draws on a Knowledge Audio Repository (KAR), a special-purpose Web-based knowledge-sharing environment, designed at the University of Cape Town to support collaborative research and information exchange among Masters in ICTs in Education students. The study also seeks to investigate the potential of DST to foster the collaborative sharing of their lived experiences and challenges of conducting research.

The significance of this research lies in the potential of DST to leverage the academic participation and engagement of subverted voices. In traditional supervisor–student consultations, the academic expertise, experience and authorial voice of the supervisor tends to overshadow the active involvement of novices (i.e. research students) in knowledge production processes as much as it may inspire them to become experts in their fields. Externalising personal knowledge through DST enhances postgraduate students' effective contribution of authentic knowledge, boosts their meaningful participation in collaborative learning activities and supports open negotiation of perspectives to create new knowledge. Knowledge production through DST is credited with integrating people and their (tacit) experiences (Bittel & Bettoni, 2012), supporting collective intelligence through group narratives (Borges & Vivacqua, 2010) and stimulating productive discussions (Cianciolo, Cianciolo, Prevou, & Morris, 2007) to build new knowledge. Despite this acclaimed value of DST, how it contributes to the externalisation of personal knowledge by previously disadvantaged students remains a grey area in literature.

## 2. Literature review

This section reviews literature on the reasons for the articulation gap and high attrition rates in South African postgraduate studies, the potential of DST to close the articulation gap and its potential contribution to the externalisation of personal (tacit and procedural) knowledge on postgraduate research processes.

### 2.1. Articulation gap in South Africa

Two strands of thought namely, the “deficiency model” and the “systemic blockages model” mainly explain the articulation gap among South African postgraduates. The student deficiency model places emphasis on the academic shortcomings of students who enter postgraduate studies particularly their limited scholarly, digital and linguistic skills and competences. It emphasises, inter alia, the admission of previously disadvantaged students with limited experiences of library facilities and independent research work (Lessing & Schulze, 2002) and students' limited academic and computer literacy (Mdyogolo, 2012) as major contributory factors to their failure to graduate and

dropping out of university. In contrast to this model, the systemic blockages model attributes the articulation gap to structural, environmental and organisational constraints in the South African postgraduate system that impede students from effectively participating in their studies. The model describes “the structural, legal, policy and organisational [barriers or] blockages in postgraduate education and training that might impede the escalation in the number of PhDs in South Africa” (Academy of Science of South Africa (ASSAf), 2010, p. 32). The ASSAf (2010, p. 67, 68) report summarises the systemic blockages that frustrate students' successful participation in doctoral studies as: (1) pipeline constraints: quality of students exiting an underperforming school system, and blockages in the graduate and postgraduate pipeline; (2) institutional constraints: limited supervisory capacity at South African universities; (3) financial constraints: inadequate funding for doctoral studies and (4) administrative constraints: rules and procedures in government departments that impact on doctoral education. Other institutional constraints underpin inappropriate supervision processes and an inappropriate research environment as the chief reasons for the articulation gap at postgraduate levels (Ssegawa & Rwelamila, 2009).

### 2.2. High attrition rates in South African postgraduate studies

Just like the articulation gap, there are multiple explanations presented for the high attrition rates among South African postgraduates ranging from personal motivations, institutional to structural barriers. At personal level, work commitments and inadequate funding are some of the main hindrances to the successful completion of degrees by postgraduates (Academy of Science of South Africa (ASSAf), 2010). Competing work commitments deprive postgraduates of the time investment and devotion to private study needed to accomplish their studies effectively. At institutional levels, the “hidden curriculum,” which describes students' inadequate initiation into the academic conventions and “codes” of engagement of their discipline, is at the heart of the explanation for the failure of South African postgraduates to function successfully in university. Essa (2010) examined the factors that contributed to the non-completion of the postgraduate nursing studies by students at Stellenbosch University, South Africa. The study reports that a lack of initiation into academic values and limited exposure to defensible forms of teaching and learning accounted for the high attrition at postgraduate level at this institution. Mutula (2009) work on the supervisor–student relationship in Sub-Saharan Africa reveals complicated academic relations comprising: supervisors who are always too busy to meet students, delays in provision of feedback, poor supervision particularly lack of schedules for meetings or records of discussions and a lack of support for students from other disciplinary backgrounds (Mutula, 2011). Structural barriers relate to national legislation that complicate or block students' exit from particular programmes until they fulfil certain performance requirements. For instance, the South African Higher Education Qualification Framework's requirement that students may not graduate with a lower qualification upon completion of course work if they fail to complete their thesis (Bitzer, 2009).

### 2.3. Digital storytelling's contribution to closing the articulation gap

Digital story telling (DST) “combine[s] narratives with digital content, including images, sound and video” with a view to “invoke an emotional effect and or to communicate a message to its audience” (Malita & Martin, 2010). It varies in complexity from the use of images with narratives to the integration of advanced multimedia (sound, animations, video, pictures, and rich text) with the intention of combining analytical interpretation, social learning and inter-cultural engagement. For Robin (2008) DST is a technology application that takes advantage of user-contributed content to enable computer users (e.g. students) to become creative storytellers through selecting a topic, conducting some research, writing a script and developing an interesting story. The user-generated story is combined with multimedia (computer-

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