

# Researching and Evaluating Digital Storytelling as a Deep Learning Tool

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## Abstract

This roundtable will discuss Digital Storytelling as a tool for deep learning, and provide a framework for researching and evaluating the process. An emerging theory of storytelling as learning and reflection on practice will be discussed, as well as the role of digital storytelling in teacher education. This roundtable will focus on a proposed research design to collect data about digital storytelling in education; several digital storytelling rubrics used to assess completed projects; and a Literature Review on Digital Storytelling.

## Digital Storytelling: Convergence

This figure graphically demonstrates that Digital Storytelling facilitates the convergence of four student-centered learning strategies: student engagement, reflection for deep learning, project-based learning, and the effective integration of technology into instruction.

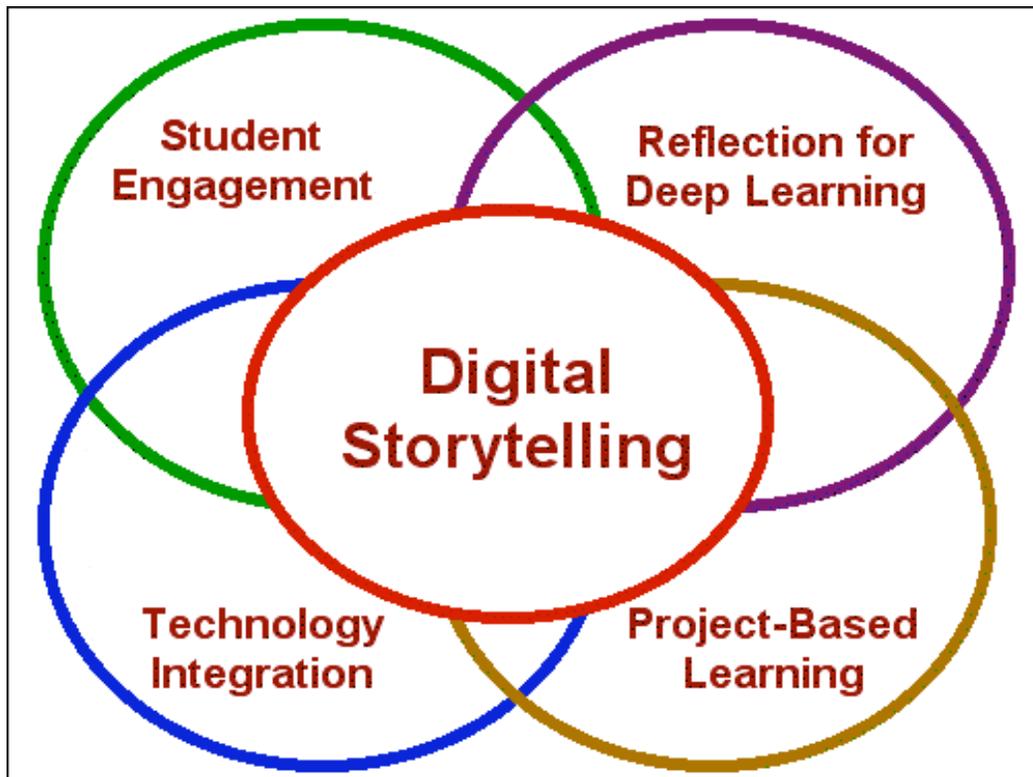


Figure 1. Convergence of Student-Centered Learning Strategies

## Digital Storytelling Research Design

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If Digital Storytelling is to become accepted in today's schools, it will be important to collect data to be able to draw conclusions about the impact that the process has on student learning, motivation and engagement and how teaching practices and strategies change with technology integration through digital storytelling.

This document outlines a potential study of the issues related to learning and reflection through digital storytelling. The data collected will provide research-based evidence on the effect digital storytelling has on student learning, motivation, and engagement. To that end we will seek to identify what conditions facilitate and encourage students to care about their work and be proud of it. Can we identify the conditions necessary to motivate students to reflect on their learning as a record of their growth over time and as a story of their learning? Some of the key research questions that will guide the study include:

- How do digital stories provide evidence of deep learning?
- Under what conditions can digital stories be successfully used to support assessment for learning?
- Under what conditions do students take ownership of their digital stories?
- What are the benefits of developing digital stories as perceived by students, teachers, administrators, and/or parents?
- What are perceived obstacles to implementing digital storytelling with P-12 students and how can they be overcome?
- How does the quality of paper-based reflection differ from digital stories?

Data could be generated through surveys, on-site observations, online discussions, and journals, as well as the aggregation of student performance-based assessment data.

The research should draw upon the established literature and theoretical constructs with validated research instruments and data collection protocols. A more comprehensive literature review is included at the end of this document. These resources could include:

- **Reflection:** Jennifer Moon, Donald Schön, John Dewey
- **Storytelling as Learning:** Maxine Alterio & Janice McDrury
- **Motivation:** Self-Determination Theory, Intrinsic Motivation (Deci & Ryan): <http://www.psych.rochester.edu/SDT/>
- **Student Engagement and Qualities of Engaging Schoolwork** (Schlechty Center): <http://schlechtycenter.org>
- **Technology Competency:** ISTE NETS-T and NETS-S plus Essential Conditions
- **Portfolio Development:** Teachers (Lyons, Shulman), K-12 Students (Hebert, Davies), Post-Secondary (Yancey, Cambridge, Tosh)
- **Assessment FOR Learning:** Stiggins, Davies, QCA: <http://www.qca.org.uk/afl/>
- **Project-Based Learning:** Buck Institute for Education (<http://www.bie.org/pbl/index.php> ) and (<http://www.bie.org/research/pbl/index.php> ) and George Lucas Educational Foundation (<http://www.edutopia.org/php/keyword.php?id=037> )

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DESIRED OUTCOMES (HYPOTHESES)	RESEARCH QUESTIONS	RESEARCH METHOD	DATA COLLECTION INSTRUMENTS/ RESOURCES
Digital Storytelling enhances student learning.	How do digital stories provide evidence of deep learning? Deep learning: <ul style="list-style-type: none"> <li>- involves reflection</li> <li>- is developmental,</li> <li>- is integrative,</li> <li>- is self-directive, and</li> <li>- is lifelong</li> </ul>	Teachers assess students level of reflection  Student reflections in digital stories Student attitude toward self-directed learning	Rubric on Reflection (based on Moon)  Random review of student stories Deci & Ryan??
	Under what conditions can digital stories be successfully used to demonstrate assessment for learning?	Teacher Reflections on implementation process Observations in schools Conversations with teachers and administrators Optional: student test data	Postings in online course or teacher blog Onsite observation checklist C-BAM Instrument Optional: site-delivered student test scores
Digital Storytelling enhances student motivation.	Under what conditions do students take ownership of their digital stories?	Questionnaire about Motivation and Learning (students)	Self-Determination Theory questionnaires (Deci & Ryan)
Digital Storytelling enhances student engagement.		Questionnaire about Level of Student Engagement and 10 qualities of engaging schoolwork Student Focus Groups	Schlechy Center Theory of Engagement and WOW instruments? Questions to be developed (based on Tosh)
Digital Storytelling is more effective than paper-based reflection.	What are the benefits of developing digital stories as perceived by students, teachers, administrators, and/or parents?	Teacher Reflections & Interviews Student Questionnaire Parent Questionnaire Administrator Questionnaire	Postings in online course or teacher blog
	What are perceived obstacles to implementing digital storytelling with students and how can they be overcome?	Teacher Reflections and Interviews Student Questionnaire or Focus Groups	Postings in online course or teacher blog  To be developed
	How does the quality of paper-based reflection differ from digital stories?	Teacher Reflections & Interviews Digital Storytelling Rubric	Postings in online course or teacher blog
Developing digital stories builds technology skills.	What are the skills necessary to effectively implement digital stories?	Technology Skills Assessment -- Teachers - Students	ISTE NETS-T  ISTE NETS-S
		Storytelling/Reflection Facilitation Skills – Teachers	To be developed
Digital Storytelling benefits all learners and all schools	What are the characteristics of the study participants?	Demographic Questionnaire – teachers & students	To be developed
	What are characteristics of school sites?	NETS Essential Conditions plus local school site information	Self-assessment plus onsite observation/ interviews

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*Digital Storytelling Rubric (Based on several rubrics posted online at: <http://rubistar.4teachers.org>)*

CATEGORY	Excellent	Good	Satisfactory	Needs Improvement
<b>Point of View - Purpose</b>	Establishes a purpose early on and maintains a clear focus throughout.	Establishes a purpose early on and maintains focus for most of the presentation.	There are a few lapses in focus, but the purpose is fairly clear.	It is difficult to figure out the purpose of the presentation.
<b>Point of View - Awareness of Audience</b>	Strong awareness of audience in the design. Students can clearly explain why they felt the vocabulary, audio and graphics chosen fit the target audience.	Some awareness of audience in the design. Students can partially explain why they felt the vocabulary, audio and graphics chosen fit the target audience.	Some awareness of audience in the design. Students find it difficult to explain how the vocabulary, audio and graphics chosen fit the target audience.	Limited awareness of the needs and interests of the target audience.
<b>Dramatic Question</b>	Realization is dramatically different from expectation.	Realization differs noticeably from expectation.	Realization barely differs from the expectation.	Realization and expectation do not differ.
<b>Voice - Consistency</b>	Voice quality is clear and consistently audible throughout the presentation.	Voice quality is clear and consistently audible throughout the majority (85-95%) of the presentation.	Voice quality is clear and consistently audible through some (70-84%) of the presentation.	Voice quality needs more attention.
<b>Voice - Conversational Style</b>	Uses a conversational style throughout.	Uses a conversational style the majority (85-95%) of the time	Uses a conversational style most (70-84%) of the time.	Presentation style is primarily monologue.
<b>Voice - Pacing</b>	The pace (rhythm and voice punctuation) fits the story line and helps the audience really "get into" the story.	Occasionally speaks too fast or too slowly for the story line. The pacing (rhythm and voice punctuation) is relatively engaging for the audience.	Tries to use pacing (rhythm and voice punctuation), but it is often noticeable that the pacing does not fit the story line. Audience is not consistently engaged.	No attempt to match the pace of the storytelling to the story line or the audience.
<b>Soundtrack - Originality</b>	All of the music is original.	Most (over half) of the music is original.	Some of the music is original.	None of the music is original.
<b>Soundtrack - Emotion</b>	Music stirs a rich emotional response that matches the story line well.	Music stirs a rich emotional response that somewhat matches the story line.	Music is ok, and not distracting, but it does not add much to the story.	Music is distracting, inappropriate, OR was not used.
<b>Images</b>	Images create a distinct atmosphere or tone that matches different parts of the story. The images may communicate symbolism and/or metaphors.	Images create an atmosphere or tone that matches some parts of the story. The images may communicate symbolism and/or metaphors.	An attempt was made to use images to create an atmosphere/tone but it needed more work. Image choice is logical.	Little or no attempt to use images to create an appropriate atmosphere/tone.
<b>Economy</b>	The story is told with exactly the right amount of detail throughout. It does not seem too short nor does it seem too long.	The story composition is typically good, though it seems to drag somewhat OR need slightly more detail in one or two sections.	The story seems to need more editing. It is noticeably too long or too short in more than one section.	The story needs extensive editing. It is too long or too short to be interesting.
<b>Duration of Presentation</b>	Length of presentation was 4 minutes.	Length of presentation was 3 minutes.	Length of presentation was 2 minutes.	Presentation was less than 2 minutes long OR more than 4 minutes.

*Based on Scott County Schools (Kentucky) Digital Storytelling Rubric*

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### *Scott County Digital Storytelling Rubric*

CATEGORY	4 Excellent	3 Good	2 OK	1 Needs Improvement
<b>Point of View</b>	Establishes a purpose and maintains a clear focus; strong awareness of audience.	Focuses on a purpose; communicates with an audience.	Some evidence of communicating with an audience for a specific purpose; some lapse in focus.	Limited awareness of audience and/or purpose.
<b>Dramatic Question</b>	Realization is dramatically different from expectation.	Realization differs from expectation.	Realization from expectation is subtle.	Realization and expectation do not differ.
<b>Emotional Content</b>	Audience is deeply and emotionally engaged.	Audience is emotionally engaged.	Audience lapses in emotional engagement.	Audience has little to no emotional engagement.
<b>The Gift of Your Voice</b>	Consistency in presentation; speaking slowly in a conversational style.	Consistency in presentation; speaking in conversational style.	Some consistency in presentation; lapses in conversational style to monologue.	Breaking consistency; monologue style of presentation.
<b>The Power of the Soundtrack - Emotion</b>	Music stirs a rich emotional response.	Music stirs an emotional response.	Music is evident.	Inappropriate choice of music.
<b>The Power of the Soundtrack- Originality</b>	All of the music is original.	Over half of the music is original.	Some, but less than half, of the music is original.	None of the music is original.
<b>Economy</b>	Sequential composition; succinct; images create an atmosphere and/or tone, and may communicate symbolism and/or metaphors.	Sequential composition; succinct; images create an atmosphere and/or tone.	Sequential composition; succinct; images are controlled/logical	Sequential composition; images are acceptable.
<b>Pacing</b>	Engaging rhythm; use of punctuation; suggestions of emotions via sound effects; use of "white space"; enhanced vitality	Engaging rhythm; use of punctuation; some suggestions of emotions via sound effects; use of "white space"; evidence of vitality.	Some rhythm; some use of punctuation; limited suggestions of emotion via sound effects; lapses in vitality.	Mechanical rhythm; limited use of punctuation; limited vitality.

Source: <http://rubistar.4teachers.org>

## Digital Storytelling Research Design

### Literature Review - Digital Storytelling

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