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## Towards a learning design for student-generated digital storytelling

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**Description**

The literature on digital video in education often emphasises the use of pre-fabricated, instructional style video assets. Learning designs for supporting the use of these expert-generated video products have been developed (e.g. Burden & Atkinson, 2008). However, there has been a paucity of pedagogical frameworks for facilitating learner-generated video projects. This paper outlines an emerging learning design for a popular genre: learner-generated digital storytelling.

**Location**

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# **Towards a learning design for student-generated digital storytelling**

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## **Abstract**

The literature on digital video in education often emphasises the use of pre-fabricated, instructional style video assets. Learning designs for supporting the use of these expert-generated video products have been developed (e.g. Burden & Atkinson, 2008). However, there has been a paucity of pedagogical frameworks for facilitating learner-generated video projects. This paper outlines an emerging learning design for a popular genre: learner-generated digital storytelling.

## **Introduction**

The value of learner-generated digital video projects (referred to subsequently as ‘DV tasks’ or ‘DV projects’) has been espoused by numerous education researchers (for example, Schuck & Kearney, 2004; Shewbridge & Berge, 2004). These constructionist learning tasks (Harel & Papert, 1991) can enhance a wide range of learning outcomes from the development of traditional and new literacy skills, to affective benefits. They can support a rich, authentic learning experience, encouraging student autonomy and ownership, meaningful student roles and interactions, especially when students are given an opportunity to discuss and ‘celebrate’ their products with a relevant audience (Kearney & Schuck, 2006). However, frameworks are needed to help teachers leverage these worthwhile outcomes in these often complex, open-ended tasks.

Frameworks are emerging around good practice with expert-generated, instructional video. For example, the DiAL-e framework has been designed to support educators in identifying suitable learning designs based on learner engagement with externally produced ‘video assets’ (Burden & Atkinson, 2008), while good practice with video-based cases have also been explored (e.g. see Barnett, 2006). However, there is generally a paucity of literature discussing principles of good teaching practices with learner-generated video tasks. Indeed, existing frameworks for supporting learner-generated digital video production tend to have a technical focus, often influenced by the professional film-making tradition, with less emphasis on important educational issues such as teacher roles and peer learning structures.

A few useful frameworks for DV tasks have been developed. For example, Theodosakis (2001) espouses 5 useful phases for film-making in the classroom: development; pre-production; production, post-production and distribution. Also, Hoban (2009) recently described a 4-stage learning design underpinning a specific genre of DV tasks: learner-generated slow motion animations (or ‘slowmations’). The stages included planning, storyboarding, construction and reconstruction. This paper introduces an emerging learning design for supporting another specific genre of learner-generated DV projects – digital storytelling (Lambert, 2002). It draws on two recent studies which sought to gain an understanding of the way that teachers and students interact and learn through these projects; one from a K-12 context (Schuck & Kearney, 2004) and one from a teacher education context (Kearney, 2009).

## **Background**

### *Learner-generated digital storytelling*

A burgeoning genre of learner-generated digital video tasks is digital storytelling (referred to subsequently as 'DS tasks' or 'DS projects'). There are many definitions of digital storytelling but in general they combine the tradition of oral storytelling with 21<sup>st</sup> century multimedia and communications tools. Unlike oral stories, they are permanent and can be disseminated widely; making them accessible for reflection and critique (Davis, 2004). We referred to the form defined by the *Centre for Digital Storytelling* in Berkeley, California (Lambert, 2002). This definition of DS tasks integrates existing photographs, music, video (optional) and especially the voice of the narrator into a brief (2-6 min.) piece, typically with a strong emotional content. Robin (2006) discusses three sub-genres of learner-generated digital storytelling, namely: personal narratives, historical documentaries and stories that inform or instruct.

Use of digital storytelling has been discussed in other fields but has only recently been reported in higher education (e.g. Tendero, 2006). For example, there is a small but growing body of literature illuminating numerous learning benefits for pre-service teachers from the process of constructing and sharing these narratives. A common theme in this literature includes the facilitation of reflection on experience (e.g. McDrury & Alterio, 2002). These authors usually draw upon the work of Schon (1983), Boud, Keogh and Walker (1985) and others to explain the potential power of DS tasks for prospective teachers' development as reflective practitioners. DS tasks also can help pre-service teachers' personal and professional identity development (Tendero, 2006). A key to these benefits is the emotional content emphasised in these tasks.

Many other benefits are reported in recent literature, ranging from the development of academic skills such as critical thinking, report writing and research skills; to digital, oral and written literacies (Ohler, 2006). Overall, this literature base points to DS tasks as a valuable, transformative tool for learning in a range of curriculum and discipline contexts. Additionally, DS tasks suit the emerging 'digital generation' of students (Oblinger & Oblinger, 2005) who are immersed in this multimedia culture and are comfortable creating and communicating with digital media (Daley, 2003).

DS tasks are accompanied by many pedagogical challenges. They are typically open-ended, ill-defined and hence more challenging for students who may be familiar with more traditional written tasks. However, there has been minimal attention paid to the teacher role or peer learning structures in the relevant literature on learner-generated digital storytelling. Given the divergent and open-ended nature of digital storytelling, it is essential that activities are framed carefully and DS projects must be explicitly tied to the core content and process goals encompassed in the curriculum (Hofer & Owings Swan, 2006). Assessing DS tasks is a major challenge for teachers, particularly as it encompasses a range of skills, processes and content goals. They can be difficult to assess because they may integrate skills from a range of disciplines, particularly those that relate to creativity components. Use of appropriate instruments such as assessment rubrics has been recommended. Staff and students also need to be aware of the intellectual property issues that arise if digital stories include copyrighted images, music, video or text (ELI website, 2007). Langran (2005) provides helpful guidance but the interpretation of educational 'fair use' of media in these types of projects is widely varied and often debated. Teachers need to proceed cautiously in collaboration with faculty intellectual property and copyright experts. Ethical issues are particularly important for teacher educators who are modelling ethical practice for prospective teachers. Given these types of challenges, a learning design underpinning these tasks is warranted.

### *Revisiting a framework for facilitating DV tasks*

In 2004, Schuck and Kearney conducted a qualitative research study investigating practices with DV tasks in five Australian case study K-12 schools. Data on teachers' and students' practices were collected and analysed from a socio-cultural perspective, in which the interactions of the group, their past experiences and beliefs, and the impact of being researched, were all seen as part of the research data. A detailed description of the methodology is presented in Schuck and Kearney (2004) and major findings are reported elsewhere (Kearney & Schuck, 2006; Schuck & Kearney, 2008). Over sixty different student-generated digital video projects were part of the data in the study, with the majority of projects (77% of cases) involving students' use of DV as a communication tool (as distinct from an observation or analysis tool – see Schuck & Kearney, 2004, p.80) to basically 'tell a story' or relay messages, ideas, reflections or information. These projects often involved students acting in roles in a variety of film genres such as news items, interviews, advertisements, and music clips.

Hence, ample data were collected from a variety of *stages* in the DV production process as students made movies in a range of contexts and genres. These stages ranged from the initial brainstorm and storyboard stages through to the important presentation and dissemination stages. Principles of good practice emerged from this data as summarized in Table 1 (from Schuck & Kearney, 2004, p.84). This summary includes suggestions for teaching strategies and peer support structures at each stage of the DV production process.

**Table 1:** 2004 Model of Good Practice for *Learner-Generated Digital Video*

**Model of Good Practice for DV Projects** from Schuck and Kearney, 2004, p.84

Stage	Teacher Strategies	Peer Learning Structures
1. Developing Ideas. Define film purpose and target audience, film genre, content and context Students research content	Scaffolding e.g. suggestions for purpose, ideas for genre, content, audience, roles etc. If possible, support student choice of genre, film content and context. Modelling of films from teacher, other experts and previous students. Modelling of relevant language.	Groups negotiate own roles based on own expertise / interest Formulate plan to swap and rotate roles through project Discussion of necessary teamwork skills
2. Storyboard / Scripting Re-storyboarding	Encourage use of mind maps to inform storyboard. Modelling of storyboards from teacher, other experts and previous students. Students have to 'sell' storyboard to teacher (formative assessment of storyboard) or peers before filming and if necessary, edit it.	Collaborative mind maps Group meetings to assess progress and share perspectives.
4. Preparation for filming	Facilitate student preparation of scripts, props, costumes, lighting etc. Modelling of relevant language. Modelling of filming techniques.	Allocation and rotation of roles Group meetings to assess progress and share perspectives.
5. Filming	Give formative teacher assessment (including informal observations) of film quality	Use of peer tutoring / 'expert' system for skills support Possible collaboration in roles (e.g. 2 people share a role.) and possible rotation of roles Peer assessment of film quality.
6. Editing	Scaffolding from teacher (e.g. some media elements – clips, photos, sounds etc. – could be supplied by teacher or from external sources – especially for younger learners). Give formative teacher assessment (including informal observations) and advise on re-filming and re-editing of scenes.	Possible collaboration with OR feedback from online filming communities
7. Small group viewing Reflect and discuss Students' own group as main audience.	Give formative teacher assessment (including informal observations) and possibly encourage re-filming of scenes Mediate small group discussions of film content or film-making process.	Peer assessment Discuss and share perspectives Possible collaboration with OR feedback from online filming communities.
8. General class / school presentation Celebration of Product!  Reflect and discuss Class / school peers and teacher as main audience.	Mediate small group discussions of film content or film-making process to extend / review / probe concept and skill development Use feedback from audience to inform teacher assessment Summative teacher assessment of task. Encourage student reflection (e.g. use of journal, e-portfolio).	Roles allocated to group for presentation Peer assessment and feedback Roles allocated to audience to encourage audience participation. Discuss and share perspectives.
9. Dissemination and publication. (CD / Web / email / TV) Audience now becomes peers external to class (include international), other teachers, parents, wider school, local or international community.	Use product for reporting to parents (incl. student-lead parent-teacher conferences). Use product to promote subject / class / school. Use product for intra or inter school film festival, competition, or TV show. Share with an online community; Possible feedback from outside experts.	Possible use of film as vehicle for communication / cultural exchange / sharing of perspectives with peers outside class. Possible use of videos as peer conversational artifacts in online communities.

At the initial development of ideas and storyboarding stages, teacher scaffolding and modelling are important. For example, some teachers in our study used segments of past students' work or commercial movies to make pertinent points, spark ideas for new projects and model appropriate language. A wide degree of choice enhanced student ownership of their projects; including choice of content, roles and if appropriate, film genre. The choice of student peers as the target audience was a major source of student motivation in our study, and encouraged use of humour and

appropriate language in their final production. Mind maps and other organizers were used as a planning tool to brainstorm ideas and for the storyboard. Students need to be accountable for their final storyboard and should be prepared for 're-storyboarding': editing and re-editing their plan before filming.

Many teachers from our study encouraged the students to take a 'playful approach' to their filming and editing and set up open-ended activities for them to discover their own mistakes and learn from them. The immediate feedback students received when they reviewed their films, as well as the ability to later edit their mistakes, helped students and teachers feel comfortable with this open-ended approach to learning. The autonomous style of learning supported by these open-ended tasks required a significant degree of flexibility from the teacher as students created their own learning pathways at their own pace. Indeed, most of the effective lessons we observed involved the teacher displaying a high degree of flexibility in the classroom to support student-initiatives and self-direction.

An important part of this framework concerned the final stages of the DV project: 'celebrating' and sharing the students' final products and conducting discussions around these artefacts. These presentations provided crucial opportunities for meaningful class discussions centred on the intended learning outcomes of the projects. The importance of the teacher's role here in mediating and directing this discussion was crucial.

Finally, formative assessment procedures were recommended in almost every stage of this framework to address learning outcomes. These included peer assessment and encouragement of group discussion and sharing of perspectives at all stages of the process. Teacher observation and feedback was also crucial, especially in the important early stages of the process. For example, to assess language development, teachers need to be active observers of students' learning conversations and writings.

### **An emerging learning design for DS tasks**

In 2008, the author carried out another qualitative research study investigating potential roles of learner-generated digital video projects incorporating the 'digital storytelling' genre. This project explored many aspects relating to the use of digital storytelling' in a teacher education context, particularly with respect to suitable pedagogical approaches, student assessment (especially portfolio assessment) and ethical and intellectual property issues. Participants in this study were eleven volunteer pre-service primary education students at an Australian university. Data included student and staff questionnaire responses, student focus groups, staff interviews, observation, and artefact analysis (the students' digital stories). A description of the methodology and major findings are reported elsewhere (Kearney, 2009).

Like our earlier 2004 study, data were collected from a variety of stages in the video production process as learners (the student teachers) designed and created their digital stories. Although the study primarily focused on the pre-service teachers' professional learning (Kearney, 2009), feedback and critical collaborative reflection (Bullough & Gitlin, 1991) amongst the researcher and critical friends of the project (academics from Teacher Education) helped refined principles of good practice, building on our previous framework for student-generated digital video projects (shown in Table 1). Informed further by relevant literature and support websites, a learning design for learner-generated DS tasks emerged, visually represented in Table 2 using a learning design visual sequence (Agostinho, Harper, Oliver, Hedberg & Wills, 2008):

**Table 2: Learner-generated Digital Stories: Learning Design Sequence**

▲ RESOURCES	■ TASKS	● SUPPORTS
<p>▲ Exemplary DS's (DVD / web-based) from external sources / previous students</p> <p>▲ Key DS websites (eg. Centre for Digital Storytelling: <a href="http://www.storycenter.org/index1.html">http://www.storycenter.org/index1.html</a>)</p>	<p><b>1. PRE-PRODUCTION STAGE</b></p> <p><b>1.1 Development of ideas</b></p> <ul style="list-style-type: none"> <li>■ Define purpose and target audience</li> <li>■ Intro. / revise elements of DS genre (eg. see Lambert, 2007); types of DS's (eg. personal* instructional, historical etc. – see Robin, 2006)</li> <li>■ Students explore possible content</li> </ul>	<ul style="list-style-type: none"> <li>● Teacher displays model DS's in relevant DS type and context (e.g. personal DS in Teacher Ed. context)</li> <li>● Teacher prompts: suggestions for purpose, focus question(s) to guide, ideas for content</li> <li>* If a main purpose of DS project is to support <i>student reflection</i> (e.g. part of portfolio): emphasise emotional connection (Lambert, 2007); encourage positive affective state (Boud et al., 1985); &amp; encourage a supportive environment where learners can safely express themselves (Boud &amp; Walker, 1998)</li> </ul>
<p>▲ Mind-mapping software</p>	<p><b>1.2 Creation of storyboard / script</b></p> <ul style="list-style-type: none"> <li>■ Use of mind maps to inform storyboard &amp; script creation</li> <li>■ Students share perspectives; 'sell' storyboard / script to teacher or peers in small group meeting, mini-conference</li> <li>■ if advised, re-edit</li> </ul>	<ul style="list-style-type: none"> <li>● (Optional) Peer collaboration</li> <li>● Teacher advises on storyboard / script writing</li> <li>● Teacher facilitates meetings to assess progress</li> <li>* If a main purpose of DS project is to support <i>student reflection</i> (e.g. part of portfolio): establish sense of trust amongst group members, especially for personal DS topics</li> </ul>
<p>▲ Creative commons media repositories (eg. <a href="http://search.creativecommons.org/">http://search.creativecommons.org/</a>)</p>	<p><b>1.3 Preparation of media</b></p> <ul style="list-style-type: none"> <li>■ Preparation for audio recording, photography &amp; filming (optional)</li> <li>■ Select appropriate copyright-free externally created media (e.g. images, music).</li> </ul>	<ul style="list-style-type: none"> <li>● Teacher advises on use of creative commons media, correct attribution procedures.</li> <li>● Teacher facilitates preparation of props, lighting etc. (if photographing / filming - optional).</li> </ul>
<p>▲ Voice recorder; Still / video cameras (optional)</p> <p>▲ Class LMS (web)</p>	<p><b>2. PRODUCTION STAGE</b></p> <p><b>2.1 Audio-recording of Narration (&amp; photography / filming – optional)</b></p> <ul style="list-style-type: none"> <li>■ Record voice-over (narration) &amp; display for feedback</li> </ul>	<ul style="list-style-type: none"> <li>● Teacher advises on audio recording (&amp; photography/filming – optional) techniques</li> <li>● Peer tutoring / 'expert' system for skills support</li> <li>● Teacher / peer feedback on audio (&amp; possibly photo / film) quality</li> </ul>
<p>▲ Video-editing software Eg. Desktop-based software such as iMovie, Moviemaker, Photostory; web-based applications such as Jaycut</p> <p>▲ Video tagging (and deep tagging), captioning &amp; annotation software. Eg. see Johnson, Levine &amp; Smith, 2008; Rich &amp; Hannafin, 2009.</p>	<p><b>2.2 Editing</b></p> <ul style="list-style-type: none"> <li>■ Use of visual &amp; audio editing techniques &amp; special effects to enhance communication of DS eg. use of 'echo', for 'other' voices (or 'inner voice').</li> <li>■ (optional) collaboration with other students using web-based video editing software</li> <li>■ (optional) tagging, captioning &amp; annotation of video (eg. for linking with other documents)</li> </ul>	<ul style="list-style-type: none"> <li>● Teacher advises on visual &amp; audio techniques &amp; special effects</li> <li>● Peer tutoring / 'expert' system for skills support</li> <li>● Formative teacher assessment (including informal observations) and advise on re-editing or re-recording.</li> </ul>
<p>▲ DVD Player/TV/Projector /Large</p>	<p><b>3. POST-PRODUCTION STAGE</b></p> <p><b>Small group viewing</b></p>	<ul style="list-style-type: none"> <li>● Formative teacher assessment and if needed, advice on further revisions</li> <li>● Mediate small group discussions of</li> </ul>

<p>screen/ Mobile device</p> <p>▲ Online filming communities.</p>	<p>■ Display DS for feedback (Small group and teacher as main audience.)</p> <p>■ Discuss and share perspectives</p>	<p>DS content or DS-making process.</p> <p>● Peer review</p> <p>● Possible collaboration with OR expert feedback from online communities (eg. partner Faculties / film communities.)</p>
<p>▲ DVD Player/TV/Projector /Large screen</p> <p>▲ Class LMS (web)</p>	<p><b>4. DISTRIBUTION STAGE</b></p> <p><b>4.1 Internal presentation</b></p> <p>■ Present DS to Class / Faculty (Class peers and staff as main audience.)</p> <p>■ Discuss and share perspectives. Use of DS's as conversational artifacts in f2f and/or online (class) communities</p>	<p>● Facilitate 'celebration' of products via facilitation of:</p> <p>a) f2f presentations eg. Faculty presentation; (internal) gala night, film festival, DS competition.</p> <p>b) web-based (internal) presentations (eg. via Class LMS )</p> <p>● Peer feedback</p> <p>● Mediate discussions of DS content to facilitate learning conversations (eg. tease out critical relations); prompt and elicit further reflections.</p>
<p>▲ Web 2.0 communities (e.g. Youtube, Teachertube, Wikis, Blogs)</p>	<p><b>4.2 Wider dissemination</b></p> <p>■ Display DS in online space to promote further exposure &amp; dialogue with wider audience (eg. staff from other Faculties / institutions; international peers &amp; staff; local or international community, outside experts)</p> <p>■ Discuss and share perspectives. Use of DS's as stimulus for learning conversations online (external) communities.</p> <p>■ (Optional) use of DV-based 'reactionary posts' to reply to original DS's e.g. in YouTube or TeacherTube communities</p>	<p>● Facilitate 'celebration' of DS products via web-based (external) presentations (eg. via video sharing site such as Teachertube, community-based film festival, DS competition etc.)</p> <p>● Mediate online discussions of DS content to facilitate learning conversations</p> <p>● Use online posts (see 4.2 Tasks) as conversational artefacts in final discussions e.g. elicit common themes - or sense of a collective 'meta story' (McKillop, 2005)</p> <p>● Encourage students to revisit and refine their DS e.g. as part of an ongoing learning portfolio.</p>
<p><b>Notes:</b></p> <p>1. The following abbreviations are used in this Figure:  <i>DS: Digital Story Source; f2f: face-to-face; LMS: Learning Management System; CC: Creative Commons</i></p> <p>2. All references are listed in References section at end of paper.</p>		

Apart from reiterating the crucial mediation role of the teacher at key points in the sequence, other features of this learning design (see Table 2 above) include:

- Identification and modelling of appropriate digital storytelling 'categories' (e.g. see Robin, 2006) and modelling of exemplary digital stories from relevant contexts (stage 1);
- Emphasis on support of students' affective domain, especially for reflection purposes (stages 1 and 4);
- Sharing of perspectives in a 'mini conference' session (stage 1);
- Explicit support for use of own or creative commons licensed media (with correct attributions) for projects to help avoid copyright issues, especially if publishing stories in web-based galleries and forums (stage 1);
- Mediation of class-based and online discussions (possibly with international colleagues) stimulated by students' digital stories (stage 4);
- The possibility of later editing of digital stories as part of long-term professional learning portfolio development (stage 5);
- More opportunities for students to review and change their work as necessary after teacher facilitated class discussions and peer feedback.



Due to the typically individual nature of the student teachers' digital stories, the initial (2004) framework (see Table 1) had to be refined to cater for these types of more personal DV tasks. For example, one of the main contexts of the study centred on use of digital stories for e-portfolio development and support of teacher reflection (see Kearney, 2009). Hence, pertinent teacher strategies and peer learning structures supporting outcomes relating to reflective practice were included.

Key teacher and peer interactions and review processes were again highlighted in this new framework. As discussed in Kearney (2009), significant learning opportunities again emerged in the final 'distribution' stages of the process: 'celebrating' and sharing the students' final products and conducting (face-to-face and online) discussion around these artefacts. These presentations provided significant opportunities for learning conversations, fostering peer critique and further student-teacher dialogue. The importance of the teacher's role here in mediating and directing this discussion cannot be over-emphasised, as these discussions (and subsequent reflective opportunities) potentially determined the overall quality of learning outcomes.

Another development was the use of online galleries and communities to promote online interactions. There are a growing number of web-based outlets for digital videos and these spaces need to be carefully evaluated before selecting a suitable platform for dissemination. Many participants from our study chose to display their digital story in the project's online gallery (<http://teacherenarratives.wetpaint.com/>) for viewing and comment by other pre-service teacher peers (and other experts) around the world.

## **Discussion**

A learning design for learner-generated DS tasks has emerged, drawing on data from two recently completed studies focusing on learner-generated DV tasks in both K-12 and teacher education contexts (Schuck & Kearney, 2004; Kearney, 2009) and an iterative cycle of consultation with the literature and critical collaborative reflection amongst subject and pedagogical experts. Although the design itself was not the primary focus of our studies, these projects have conveniently given us the opportunity to test and further develop notions of good practice. Further evaluation, involving teachers, students and feedback from professional learning communities such as the LAMS community (Dalziel, 2007), will form the next cycle in the development of this emerging learning design.

The learning design will inform the creation of accessible, malleable 'e-templates' for other teachers to use in a similar fashion to the 'e-templates' created by Kearney and Wright (2002) for the *multimedia-based POE* design. Indeed, the LAMS pedagogical planner (Cameron, 2008) holds promise to support the sharing of effective pedagogy and content as well as a user-friendly system for re-use and enactment of learning designs such as the one presented in this paper. These (LAMS-based) 'templates' and associated pedagogical notes will then be used as a starting point (or at least a 'talking point') for teachers wanting to adapt this learning design to inform context-specific DS tasks.

This learning design is by no means prescriptive—while such a framework provides a useful guide to structure learning experiences for learner-generated DS tasks, account still needs to be taken of learners' specific characteristics and needs, the environments in which the learning will (and could potentially) take place and the preferences and characteristics of teachers (including their

epistemological beliefs). Like any teaching role, expertise is needed in mediating the learning experience. For example, the digital video products in both our studies became “ ‘things to think with’, constructed objects which foster dialogue and discussion” (Freidus & Hlubinka, 2002, p.24). There were opportunities for peer critique (Jenkins and Lonsdale, 2007) and student-teacher dialogue and these discussions involved both formative feedback (e.g. on the script and pilot versions of digital videos) and summative feedback (e.g. final showcase sessions). They often emphasised the fundamental importance of the ‘teacher as listener’ role (Russell, 2005) in reflective dialogue.

Dissemination and publishing of students’ video products needs careful consideration to maximise peer learning opportunities and there are an increasing number of outlets at this final stage including school film festivals, external film competitions, international cultural exchanges and web-based TV shows. An interesting development here is the use of online galleries and ‘digital video’ communities (e.g. see Ugoretz & Theilheimer, 2006) to promote reflective online interactions. McKillop (2005) discusses interesting extensions here. Firstly, the notion of ‘responding’ to a published digital story in video mode: “responding to stories with a similar story is a most common way to respond” (p.6). Indeed, this is easily facilitated in video-based galleries such as *YouTube* and *Teachertube* where people can make video-based ‘responses’ to already published videos. Secondly, he suggests students making a final ‘what I learnt’ overall response where they think about what they have learned from the initial video *and* from responses to it. This could easily be done in online galleries using facilities such as the Discussion forum in *WetPaint*. Students need to take ownership of this type of gallery to empower them and provide them with a collective voice; potentially forming a sense of ‘metastory’—a story of the collected stories (of the group) with connected emerging themes (McKillop, 2005).

Further work is needed on exploring the affordances of emerging technologies such as ‘deep tagging’ of video (creating direct links to small parts of a video—see Johnson, Levine & Smith, 2008) and annotated video (Rich & Hannafin, 2009), investigating how these capabilities can contribute to the formation of new pedagogies. For example, applications such as *Videopaper*, or free web-services such as *Viddler*, can assist learners in making explicit links to exact points in their digital stories, potentially creating new possibilities for scholarly discussion and reflection around learners’ digital story artefacts. For example, the ability to hyperlink sections of text-based documents to reference key frames of learners’ digital stories opens up a range of opportunities for e-portfolio tasks. Indeed, further research is needed to investigate fruitful links between digital stories, portfolio assessment and reflective online dialogue—for example, in web 2.0 communities (Albion, 2008).

## **Conclusion**

The learning design presented in this paper stresses the importance of teacher roles and peer learning structures in the complex and often time-consuming process involved in learner-generated digital storytelling tasks. As scholars become more familiar with both the technology and the genre, digital storytelling tasks are expected to find favour among both instructors and students in higher education. The literature points to DS tasks as a valuable, transformative tool for learners in a range of curriculum and discipline contexts and the emerging learning design described in this paper will foster sound pedagogical approaches associated with these tasks.

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