

**Research Bank**

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## **iPed Pedagogy for Digital Text Production**

Kathy A. Mills, *Amanda Levido*

### **Introduction**

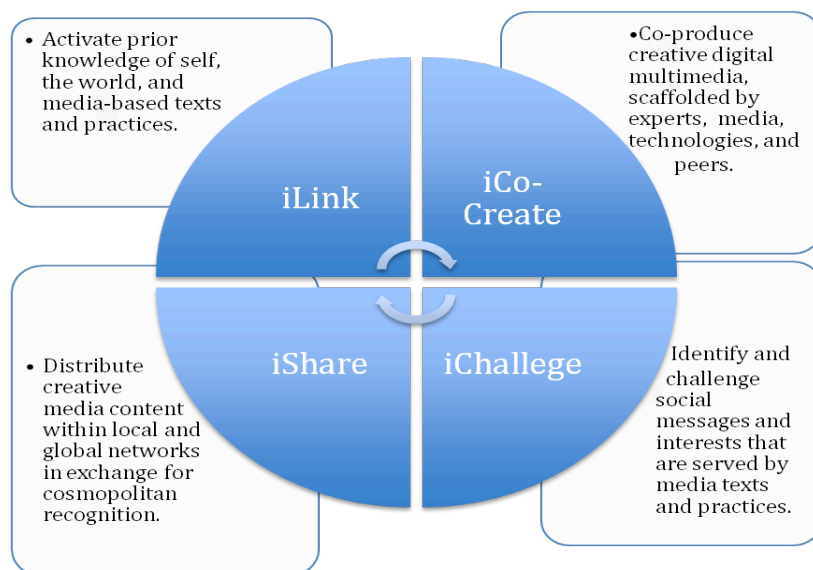
From Melissa's (all names are pseudonyms) blog: "What I have liked about computers so far is everything. What I have not liked so far is having to turn them off!" Melissa is an 8-year-old who struggles with writing and attends a school with a large cohort of culturally diverse, low socioeconomic students. This blog was written during a series of digital media based literacy lessons in which she created a Web profile, blog page, podcast, online comic, and micro documentary. Her statement highlights what practitioners are discovering about the potential of new digital media to engage disadvantaged learners in textual practice. This article introduces new pedagogy for transforming conventional writing practices in the digital age that was developed in the context of classroom based research.

The model presented here is grounded in the understanding that emerging communications technologies generate new forms of textual production that require new pedagogies in literacy classrooms. Theorists of multiliteracies (Cope & Kalantzis, 2000b; Mills, 2011; The New London Group, 1996), the new literacy studies (Gee, 2005; Lankshear & Knobel, 2003; Mills, 2010a; Street, 1997), and multimodal semiotics (Qewitt, 2006; Kress et al., 2005) have drawn attention to the increasing digitalization of print in globally networked and culturally diverse societies.

Communication is increasingly digital and multimodal – combining print with audio, visual, gestural, and spatial modes – as multimedia technologies, screen-based interfaces, and electronic networks expand (Kress, 2000a, 2000b). These arguments have been circulated in literacy research for over a decade. The digitalization of print is almost taken for granted by educators as they engage in routine practices such as sending text messages, making online financial transactions, sending e-mails, sharing digital images, using search engines, designing personal Web profiles, navigating the Internet, presenting slideshows, using spreadsheets and databases, and creating multimedia products. The digitalization of print is no longer an argument that researchers must continually defend (for arguments

concerning the changing nature of literacy, see Mills, 2008, 2009, 2010b, 2010c).

What literacy teachers need to know is how to transform the print-based practices that have dominated Western schooling into digital practices that more closely reflect the authentic uses of literacy beyond the classroom. This article offers a model for guiding learners to become creative and collaborative producers, rather than simply consumers, of digital media texts in schools (see Figure 1).



**Figure 1.0 iPed – Pedagogy for Creative Digital Media Production**

The model begins with learners making connections between their experiences and the world, while scaffolding the production of digital media-based texts through a process of coproduction between experts, novices, and the built-in features of the technologies. The model integrates key principles of learning in a Web 2.0 environment, leading students to critically select and challenge media-based texts while moving the students to share and distribute their work online to gain cosmopolitan recognition.

Given the rise of the social Web, or Web 2.0, iPed is timely in the contemporary context (Kress, 2000b; O'Reilly, 2005). When contrasted with the earlier applications of the Internet, Web 2.0 has increased the ease and reduced the cost of online collaboration. Democratic forms of communication have taken center stage, including polls, social networking sites, blogs, and microblogs. User-generated content, such as podcasts and images, can be shared with ease. Also referred to as the read/write Web, Web 2.0 provides a means for free, rapid dialogue and instant feedback from significant international audiences (Mills, 2010a; Wheeler & Wheeler, 2009).

These online tools provide an infrastructure that supports collaborative digital media design among all ages, encouraging what Jenkins (2009) described as a participatory culture of digital media production. Teachers are giving students the opportunity to draw on these out-of-school media literacies to enhance in-school literacy learning. In educational practice, these shifts in Web-based social practices call for changes to print-based pedagogies for writing to include authentic digital forms of communication that are used in society today.

## Research Overview

iPed was generated in the context of a four-year, design-based research project. Design-based research is interventionist – it investigates the possibility for educational improvement rather than merely examining what already exists (Brown, 1994; Cobb, Confrey, diSessa,

Lehrer, & Schauble, 2003). One of the main aims of the study was to prototype the use of print and digital media production for literacy learning among ethnically and economically marginalized students.

Three year 4 teachers and their cohort of 75 students (ages 8.5-9.5 years) participated in the research. A specialist media arts teacher implemented lessons for six hours each week (two hours per class), supported by a literacy researcher. The program introduced students to the features of new digital text types: blog pages, podcasts, micro-documentaries, Web profiles, digital stories, and online comics. Students were also introduced to new meta-languages to describe media texts (e.g., shot types, cutaways, transitions), and technical proficiencies with a suite of media software (see Figure 2).

iWeb Skills Sequence		iMovie Skills Sequence	
<b>About Me Page</b>	<ul style="list-style-type: none"> <li>- Select background from a template and text</li> <li>- Delete unwanted text from template</li> <li>- Use of Photobooth application to take photos via webcam</li> <li>- Add photos to page</li> <li>- Add a countdown widget</li> </ul>	<b>Story-boarding</b>	<ul style="list-style-type: none"> <li>- Learn to identify and apply a range of shot types</li> <li>- Storyboard conventions such as frame, vision and sound</li> <li>- Scripts to match storyboards</li> </ul>
<b>Blog Page</b>	<ul style="list-style-type: none"> <li>- Typing skills</li> <li>- Select fonts &amp; colors of text</li> <li>- Navigate the 'Entries' and 'Archive' pages</li> </ul>	<b>Filming</b>	<ul style="list-style-type: none"> <li>- Camera use such as turning on and off, zooming, playback</li> <li>- Shot selection</li> <li>- Film using storyboard /planning sequences</li> </ul>
<b>Podcast Page</b>	<ul style="list-style-type: none"> <li>- Use of 'Garageband' application</li> <li>- Record and edit podcasts</li> <li>- Drag pictures to a different application</li> <li>- Export podcast from Garage- band into iWeb</li> </ul>	<b>Editing</b>	<ul style="list-style-type: none"> <li>- Create new iMovie project</li> <li>- Import footage taken on cameras</li> <li>- Crop clips</li> <li>- Add clip to the timeline</li> <li>- Change the position of the clip in the timeline</li> <li>- Add special effects such as transitions and visual effects including color palette changes</li> <li>- Add voiceovers, sound effects and music to their timeline</li> <li>- Add titles, subtitles and end credits to projects</li> <li>- Cutaways added into the middle of a clip</li> <li>- Export movie into AVI format for sharing</li> </ul>
<b>Movie Page</b>	<ul style="list-style-type: none"> <li>- Drag iSight widget over to iWeb</li> <li>- Record and delete movies</li> <li>- Play, pause and adjust volume levels of movie</li> </ul>		

Figure 2 – Media Design Skills Sequence

A complete description of the research design, participants, and methods can be found in the Research Supplement that accompanies the online version of this article.

### iPeds Pedagogy

Throughout the year, we observed pedagogical transformations in the writing classrooms, and the development of new technical competencies among the students. The iPeds model reconfigures theory about literacy pedagogy with the four most recurring features of pedagogy observed in our intervention across more than 180 media-based lessons on linking, cocreating, challenging, and sharing. The model was shared with the year 4 teachers at the beginning of the fourth quarter for appraisal.

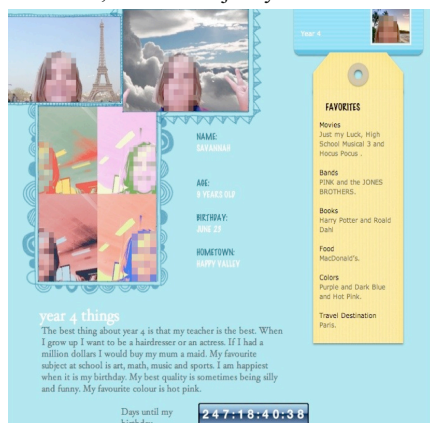
The iPeds phases are elaborated with classroom examples in the following sections. It is beyond the scope of this article to provide step-by-step instructions for teachers to reproduce all of the multimedia products in our study Furthermore, technical procedures for digital design, such as recording voice, designing webpages, and digitally editing movies, are software specific (e.g., Apple iMovie vs. Windows Movie Maker). iPeds addresses the

pedagogical principles that defined instruction across all media units, irrespective of the digital software used and the texts produced: Link, Challenge, Cocreate, and Share.

### Link

Link is the first principle of iPed. In Link, teachers assist students to make three kinds of connections between media texts: text to self, text to culture, and text to world. Link centers on culturally inclusive practice and originated from the observation that our students were most engaged in texts when the teachers selected multimedia and print-based texts that addressed themes that were familiar to the students' experiences. The students' world of everyday lived experiences, which includes shared cultural assumptions, is referred to as their lifeworld (Cope & Kalantzis, 2000a). Some examples of Link that were observed in our study included the following:

- In a unit about biographies, the teachers incorporated texts about indigenous heroes to relate to the cultural background of our aboriginal students.
- The students wrote about their home life and community interests in an online blog.
- When choosing pictures for their story writing, which was presented on webpages, the students were permitted to select their favorite cartoon images from the Internet, thus linking to their home literacies. We have provided an example of an "About Me" webpage created by Savannah, who, is Anglo-Australian and from a low-socioeconomic area, like the majority of the students in our study (see Figure 3).



**Figure 3: Savannah's profile page**

Savannah was able to share information about her likes and dislikes, providing insight into her cultural experiences. She celebrated her affection of cultural icons, such as Harry Potter and High School Musical. She also gave her audience information about her future ambitions, her school life, and insight into her home life. Savannah was able to share information about her likes and her likes and dislikes, providing insight into her cultural experiences. She celebrated her affection of cultural icons, such as Harry Potter and High School Musical. She also gave her audience information about her future ambitions, her school life, and insight into her home life. Savannah's productive engagement with the task was not simply tied

to the novelty of the technology but also the ease with which she was permitted to draw from the cultural experiences of her life-world.

Many of our students were from homes that did not have reliable computers and Internet access, so the digital creation of texts involved new social practices that were somewhat removed from these students' world of experience. Yet, by drawing on culturally inclusive texts and subject matter, the students were better positioned to engage in authentic literacy practices with technologies.

Link is an essential pedagogy in globally connected societies where local teaching contexts, like ours, are comprised of heterogeneous groups of learners from varied cultural backgrounds. By beginning with familiar texts from students' homes and communities, teachers can embrace the diversity of interests and experiences of the class. The teacher also helps students link to new experiences of the world and unfamiliar textual practices. Link emphasizes cultural inclusiveness, negotiating differences among learners and creating bridges for those who have the greatest distance to travel to make links to new competencies. This pedagogy also draws on principles from cognitive learning theory, which concerns the assimilation of new knowledge to make links to the new (Piaget, 1952).

### Challenge

The second phase of iPed is Challenge – a practice stemming from critical literacy and applied to

multimedia-based texts in a digital age. This is important because of the increasing accessibility of uncensored texts on the Internet. Challenge acknowledges that texts and textual practices are ideological and social; that is, they are located in specific social and cultural fields and are tied to power relations (Luke, Comber, & Grant, 2003). Challenge specifically concerns new issues that have evolved in relation to the ease and accessibility of producing and consuming media-based texts on the Internet. Students need to know about online security, censorship, democracy, and changing perceptions of ownership of intellectual property. Students need skills to select texts from a much larger quantity of online information than ever before, which requires selectivity and discernment. Challenge involves teaching students how to judge the authenticity and authority of Web sources. This requires identifying the intended consumers, and assumptions about gender, age, social class, ethnicity, belief systems, silences, and whose interests are served by the text. For example, in our study, the media teacher introduced Web profile pages. Several examples of websites were used to help students understand some of the features and purposes of websites. The students were guided to answer a series of Challenge questions, such as the following, that were tailored to match the specific content of example webpages:

- What is this website about?
- What is the purpose of the website?
- Who created the website?
- Who will benefit from the website?
- What are the features of the website?
- What does the website suggest about people of different ages?
- What does the website suggest about girls and boys?
- What does the website suggest about people from different cultures?
- Can you trust the information in this website? Why or why not?
- What do you like or dislike about the website?
- Do you have a different view? Why?

Learners can present their critiques in a variety of formats, such as discussions, matrices, debates, interviews, and written textual products. Throughout the process of textual design, students interpret, select, and evaluate knowledge sources for different audiences and social purposes. Challenge also involves reflecting critically on the cultural and social assumptions represented through their own textual products. For example, teachers in our research guided students to think about issues of audience, purpose, interests, and Internet safety as they created blogs in a secure and monitored intranet administrated by the local state department of education:

- Why am I creating this blog?
- What text features (e.g., words, images, audio) will best suit my purpose?
- Who is my intended audience?
- Who else potentially has access to my blog?
- What information about myself should I share or hide?
- How does my blog build on the contributions of my peers in the discussion thread?
- How do my blog entries show respect for my teacher and others in my class (e.g., manners, language use)?
- What do my blog entries say about people of different ages, occupations, and cultures?
- Whose views have I included or left out? Why?
- Who benefits from my blog? Why?

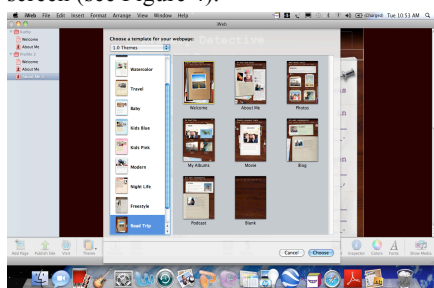
### ***Cocreate***

Co-create is the third phase of iPed and specifically draws attention to coproducing media for real audiences within and beyond the school. This orientation is reflected in a Web 2.0 textual environment, where there is an emphasis on the collaborative design of knowledge and texts. A key feature of the pedagogy is that expertise and authority are distributed among the students rather than located in a single individual. This pedagogy extends principles of situated cognition by key theorists Vygotsky (1962), Lave and Wenger (1991), and Brown and Campione (1994) to the specific field of media text production in a digitally networked age.

A pedagogical strategy was developed to scaffold the print and digital dimensions of learning within the Cocreate phase of instruction:

1. Predict – Anticipate the functions of the software to help students accommodate or assimilate new knowledge with existing knowledge.
2. Demonstrate – The teacher or other experts show examples of how to create a digital text, focusing attention on important text features and an age-appropriate number of new digital functions in one lesson phase.
3. Do – Students apply knowledge of how to construct a digital text in a supportive classroom environment with hands-on access to the technology.

This teaching cycle can occur several times within a lesson. In the first lesson, the media arts teacher researcher showed students a variety of examples of personal webpages, including how the text features (e.g., content, images, backgrounds, navigational tools) differed according to the intended audience and purpose. The students completed a matrix comparing the features of different websites. In the next lesson, she then taught the students how to create their first webpage with Apple iWeb software. She used her laptop and a data projector to show the whole class the software interface. The students were seated in front of their own computers while able to view the teacher's screen (see Figure 4).



**Figure 4: Choosing a Webpage template**

The teacher gave students step-by-step instructions for creating their personal websites, frequently asking the students to predict where to locate some of the icons. This teaching cycle can occur several times within a lesson. In the first lesson, the media arts teacher researcher showed students a variety of examples of personal webpages, including how the text features (e.g., content, images, backgrounds, navigational tools) differed according to the intended audience and purpose. The students completed a matrix comparing the features of different websites. In the next lesson, she then taught the students how to create their first webpage with Apple iWeb software. She used her laptop and a data projector to show the whole class the software interface. The students were seated in front of their own computers while able to view the teacher's screen (see Figure 4).

The teacher gave students step-by-step instructions for creating their personal websites, frequently asking the students to predict where to locate some of the icons to achieve their intentions. After each manageable set of instructions, she provided time for the students to follow the same steps on their own computers.

Teacher: Begin by finding the iWeb icon or picture on the sidebar or in the applications folder. Mine is on the sidebar. Click on it. Now you try. [The students work in pairs at computers to locate the iWeb icon, and the teachers assist.]

Teacher: When I go to "File," where do you think I need to click to create a new website?

Student: "New Site."

Teacher: That's right-click on "New Site." A box pops up that allows me to choose a template and color scheme for my personal website. Once I have decided that I like this one because it suits my interests, I highlight the "Welcome" page. Now, where will I click to choose?

Student: "Choose."

Teacher: Well done. I click on "Choose." Now you try. [The students work in pairs to go to "File," "New Site," the "Welcome" page, and "Choose." Teachers assist pairs.]

Teacher: Congratulations! You have started your website!

The lesson continued in this manner, adapting the number of instructions given at a time depending on the complexity of the task and the students' ability to remember the steps. During longer sets of instructions, the students were provided with written help sheets (see Figure 5).

#### Creating a Welcome Page

This web page should introduce the webpage and what sort of things you will post. You can also add pictures that you think suit your page.

1. Write a short description about you and your website in the text box. You can change the color and font if you like, but make sure we can still see the text clearly.
2. Make sure you include the name of your favorite website.
3. Highlight the name of your website. We are going to create what is called a hyperlink, so we can visit the webpage straight from your screen!
4. Once you have highlighted the name of your website, select "Insert" from the menu along the top.
5. Go down until you find "Hyperlink" then, go across and click on "Website". This should bring up a toolbox.
6. Make sure it says "Link to an external page." Use the drop down menu if you need to change this.
7. Next to the box that says URL, type in the complete website address. Make sure there are ticks next to the text that says, "Enable as a hyperlink" and "Make hyperlinks active."

**Figure 5: Welcome page help sheet for Apple iWeb**

To guide students' digital text creation, the teacher alternated very short periods of expert instruction with time for students to apply the instruction using the technologies. During the students' practice, they also received timely support and signposts by experts (i.e., peers, teachers, researchers) in the room to focus the students' attention on significant aspects of the design. This pedagogy emphasized guided social participation or joint construction of texts among cocreators, whose digital text production was scaffolded by peers, experts, technologies, screen displays, help sheets, and other learning tools.

Through such demonstration and guided participation, students were able to anticipate the process before immediately applying the new knowledge to their own textual production (Brown & Campione, 1994). Demonstration involved guided participation in learning, or scaffolding, within the students' many zones of proximal development. The expert took the students to the outer limits of their potential social and cognitive attainment (Vygotsky 1978). During times when students needed the most guidance, the expert's instruction and students' practice occurred almost simultaneously. The demonstration process meant that students received sufficient instruction to take some risks as they were provided with information immediately prior to application, when it could most usefully organize and guide practice. Research has shown that in the absence of demonstration, learners can spend a significant proportion of their time pursuing unproductive learning paths (Mills, 2006).

During Co-create, the responsibility for learning was gradually released to the students, as the pedagogy shifted from demonstration to application (Do), supported by peer collaboration. The need for the gradual reduction in the degree of scaffolding as students become proficient learners is highlighted in the following transcript. Rachel and Jade had just finished completing their jointly constructed micro-documentary:

Researcher: What did you learn about making a micro-documentary?

Rachel: I learned how to film and, like, how to add all the titles and effects, and all the pictures. I didn't know anything about that, but now I do. If we did it again, we would probably add costumes and actually play the characters better. We know how to film and not make mistakes. And we actually know how to put it together instead of having all this help.

Researcher: Right. So, you think that if you did it again, you would do more by yourself.

Jade: And do it a bit...better.

The students demonstrated greater speed and independence with digital text production as they revisited technical procedures such as deleting footage from digital cameras, inserting new webpages, or logging on with usernames. The students moved from scaffolded text creation when new literacy practices were initially introduced, to later internalize new knowledge and apply digital procedures for new social purposes.



An essential feature of Ccreate was that a variety of strategies was needed to make learning collaborative and distributed among the students and teacher (Gee, 2000). Brown et al.'s (1993) principle of distributed expertise was paramount to the social interactions and grouping of students. Competent students scaffolded the learning of novice peers, who in turn trained others. When creating webpages, the classroom teacher specifically allocated competent and struggling students to work together. Vivian, a year 4 teacher, commented: *Tracey is pretty capable of doing anything. You find her doing everything at a high quality, even with the new media skills. I've put her in a group so that she can... mentor the other kids... Timothy... is doing a lot better being with her.*

The teachers also established a practice called the five-minute rule, which involved an initial five-minute period during "Do", when the students were not permitted to ask the teacher for help. Instead, they could attempt to solve problems independently through trial and error, asking a peer, or consulting the help sheet. The longer the students continued using a particular digital interface, the less they relied on the classroom teacher to solve technical problems. Later in the year, the number of students with their hands up to ask questions greatly diminished, even during times when the five-minute rule was not applicable. This reflected their growing confidence in solving their own technical problems, drawing from the distributed expertise among their peers.

### **Share**

The final pedagogy in iPed is Share presenting texts to local community and global audiences. While teachers made formal, comparative judgments about students' textual products, learning was also judged informally by participation in digital practices within local and global communities. This practice draws on Bourdieu's (1986) principle of cultural capital—a form of social power, such as educational qualifications, that is convertible under certain conditions to economic capital. In Bourdieu's understanding, there are specific "profits" which children from different social backgrounds can obtain from the academic "market."

Share is about translating students' proficiencies with digital media design in exchange for cosmopolitan recognition and status. For example, in our research, students' multimedia products were formally presented to the Indigenous and non-Indigenous local community, including students, parents, the school principal and deputy, and visitors from the university. The teachers also accessed virtual classrooms within the state school intranet called The Learning Place, where teachers and students could receive constructive and positive feedback from others while gaining credibility for their work.

An aim of iPed is to give students sufficient access to design and share digital products with new confidence, taking on the situated identities of filmmakers, Web designers, and specialists who engage in text production for genuine social purposes. It is important for students to have an online international audience. Many school districts have secure online spaces for teachers to upload students' media products for certain online communities. With the ease of Web 2.0 tools, receiving international recognition for user-generated content is a powerful way to give the learners' achievements greater visibility and status in a competitive global economy.

### **Learning Gains with iPed**

An immediate result of iPed was that we saw reluctant writers approach writing tasks on the screen with significantly greater enthusiasm and a readiness to produce texts than when writing with pencils on paper. For example, Margaret described a student: I have noticed the quality and quantity especially, and the lack of hesitation with even my slower writers – the slower workers at getting in and writing and doing whatever they have to. Whether it's typing or not, the increase is there. The percentage of students engaged in each lesson period was documented across 180 hours of focused lesson observations. Time on task was higher when individuals created screen-based texts on the laptops than when writing on paper. Time on task was also consistently high when whole-class teacher instruction was supported by multimedia displays on a large screen.

By the end of each quarter, all students, including those with learning difficulties, had produced the intended digital texts. Across the course of the year, these texts included websites, short documentary films, blogs, podcasts, digital stories, and online comics. Teachers and researchers designed rubrics to assess the demonstrated textual knowledge, application, and presentation of each digital product (see Figure 6). The students who attended school consistently during the media-

ASSESSABLE ELEMENTS	DESCRIPTORS				
	A	B	C	D	E
	The student work demonstrates evidence of:				
Knowledge and understanding	Comprehensive knowledge and understanding of personal website conventions, utilizing the template and a range of modes (e.g. still and moving images, sounds and words).	Good knowledge and understanding of personal website conventions, utilizing the template and a range of modes (e.g. still and moving images, sounds and words).	Satisfactory knowledge and understanding of personal website conventions, utilizing the template some modes (e.g. still and moving images, sounds and words).	Variable knowledge and understanding of personal website conventions, utilizing the template and a range of modes (e.g. still and moving images, sounds and words).	Rudimentary knowledge and understanding of personal website conventions, without using the template or a range of modes.
	Website shows a deliberate and effective selection of words and images to represent self through a website to an audience.	Website shows deliberate selection of words and images to represent self through a website to an audience.	Website shows some selection of text/images to represent self through a website to an audience.	Website shows a variable selection of words and images to represent self through a website to an audience.	Website shows poor selection of images and few words to represent self through a website to an audience.
	Text shows above average knowledge of linguistic conventions – text structures, grammar, punctuation, vocabulary and spelling.	Text shows good knowledge of linguistic conventions – text structures, grammar, punctuation, vocabulary and spelling.	Text shows sound knowledge of most linguistic conventions – text structures, grammar, punctuation, vocabulary and spelling.	Text shows poor knowledge of linguistic conventions – text structures, grammar, punctuation, vocabulary and spelling.	Text shows very poor knowledge of linguistic conventions – text structures, grammar, punctuation, vocabulary and spelling.
Application	Creative and competent creation of text to express ideas by selecting and combining text elements, techniques, skills and processes.	Creative and competent creation of text to express ideas by selecting and combining text elements, techniques, skills and processes.	Satisfactory creation of text to express ideas by selecting and combining arts elements, techniques, skills and processes.	Variable creation of text to express ideas using arts elements, techniques, skills and processes with teacher support.	Shows very poor evidence of text elements, techniques, skills and processes, even with teacher support.
About Me Page	About Me Page shows skilful inclusion and manipulation of: <ul style="list-style-type: none"> <li>- Background templates</li> <li>- Associated text and images (added and deleted)</li> <li>- Photos</li> <li>- Countdown widget</li> </ul>	About Me Page shows inclusion and manipulation of: <ul style="list-style-type: none"> <li>- Background templates</li> <li>- Associated text and images (added and deleted)</li> <li>- Photos</li> <li>- Countdown widget</li> </ul>	About Me Page shows inclusion of: <ul style="list-style-type: none"> <li>- Background templates</li> <li>- Associated text and images (added and deleted)</li> <li>- Photos</li> <li>- Countdown widget</li> </ul>	About Me Page shows some inclusion of: <ul style="list-style-type: none"> <li>- Background templates</li> <li>- Associated text and images (added and deleted)</li> <li>- Photos</li> <li>- Countdown widget</li> </ul>	About Me Page shows no evidence of: <ul style="list-style-type: none"> <li>- Background templates</li> <li>- Associated text and images (added and deleted)</li> <li>- Photos</li> <li>- Countdown widget</li> </ul>
Blog Page	Blog Page shows skilful inclusion and manipulation of: <ul style="list-style-type: none"> <li>- Blog text structure</li> <li>- Associated text and images (added and deleted)</li> <li>- Fonts and colours of text and graphics</li> </ul>	Blog Page shows good inclusion and manipulation of: <ul style="list-style-type: none"> <li>- Blog text structure</li> <li>- Associated text and images (added and deleted)</li> <li>- Fonts and colours of text and graphics</li> </ul>	Blog Page shows inclusion of: <ul style="list-style-type: none"> <li>- Blog text structure</li> <li>- Associated text and images (added and deleted)</li> <li>- Fonts and colours of text and graphics</li> </ul>	Blog Page shows some inclusion of: <ul style="list-style-type: none"> <li>- Blog text structure</li> <li>- Associated text and images (added and deleted)</li> <li>- Fonts and colours of text and graphics</li> </ul>	Blog Page shows no evidence of: <ul style="list-style-type: none"> <li>- Blog text structure</li> <li>- Associated text and images (added and deleted)</li> <li>- Fonts and colours of text and graphics</li> </ul>

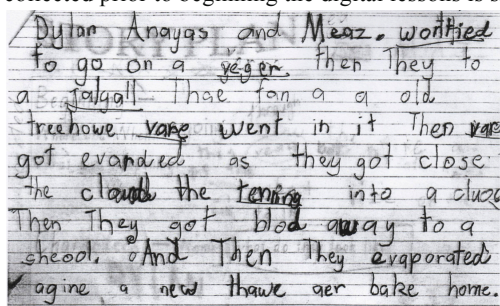
Figure 6 Comparative Assessment Rubric for Website Task (continued next page)

Podcast Page	Podcast Page shows skilful inclusion and manipulation of: - A podcast created on Garageband and exported into iWeb - Associated text and images	Podcast Page shows good inclusion and manipulation of: - A podcast created on Garageband and exported into iWeb - Associated text and images	Podcast Page shows inclusion of: - A podcast created on Garageband and exported into iWeb - Associated text and images	Podcast Page shows some inclusion of: - A podcast created on Garageband and exported into iWeb - Associated text and images	Podcast Page shows no evidence of: - A podcast created on Garageband and exported into iWeb - Associated text and images
Movie Page	Movie Page shows skilful inclusion and manipulation of: - iSight widget to create a webcam movie on page - Associated text and images	Movie Page shows inclusion and manipulation of: - iSight widget to create a webcam movie on page - Associated text and images	Movie Page shows inclusion of: - iSight widget to create a webcam movie on page - Associated text and images	Movie Page shows some inclusion of: - iSight widget to create a webcam movie on page - Associated text and images	Movie Page shows no evidence of: - iSight widget to create a webcam movie on page - Associated text and images

**Figure 6 Comparative Assessment Rubric for Website Task**

based literacy lessons demonstrated an ability to meet the criteria at a sound level or above.

We have selected Scott's print and digital writing samples to illustrate the typical degree of change that the teachers and researchers observed in the students' writing in Margaret's classroom – the year 4 class with the highest cohort of students with learning disabilities. Scott is an indigenous student identified by the teacher as one of the five lowest achieving students, who "tries hard" but "struggles with writing." A writing sample collected prior to beginning the digital lessons is shown in Figure 7

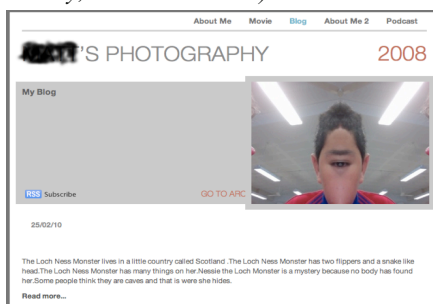


**Figure 7: Scott's unedited writing sample**

of information reports. His writing includes accurate vocabulary (e.g., "Loch Ness Monster," "Scotland," "mystery"), no omitted words, and very few spelling and punctuation errors (e.g., "snake like", "no body" for "nobody", "were" for "where"). At the end of the first 10 weeks of the digital writing lessons, Margaret

More than 50% of the words in Scott's narrative contain errors, including misspelled words, incorrect word choice, redundant words, omitted words, and punctuation errors. The sentence structures are simple and repetitive, with most sentences beginning with "Then." The intended meaning of the final sentence is difficult to discern. This can be compared with Scott's unedited blog (see Figure 8), which applied his knowledge of information texts, content about the Loch Ness Monster, and new technical proficiencies with two software systems: Apple iWeb and Photo Booth. Scott's blog of similar length to his writing sample shows understanding of the purpose and structure

commented about Scott's progress: "I have noticed a huge improvement this year."



**Figure 8: Scott's unedited blog 10 weeks later**

### Why Use iPad

The iPad model for pedagogy offers teachers a way to engage students with print using new media technologies, scaffolding learning in a way that supports collaboration among peers. Incorporating Link, Challenge, Cocreate, and Share into classroom practice can equip students to become both creative producers and critical consumers of user-generated Web content. This method begins by validating students' existing

cultural knowledge and skills, then moving them forward to mature forms of textual practice. Our research indicated that the following are the top 10 learning benefits of iPed:

1. Authentic literacies – Text production in iPed involves communication to real audiences beyond the classroom, rather than the audience of one, the teacher.
2. Digital literacies – Students are taught the technical knowledge necessary to participate meaningfully in a society where print is increasingly digitalized.
3. Conventional literacies – Writing skills, text structure, grammar, spelling, and punctuation are taught, practiced, and assessed within new digital formats.
4. Multimodal literacies – Students have opportunities to use multiple modes to communicate meaning by combining words, images, audio, gestural, and spatial elements in their texts.
5. Creative text production – Text production becomes more than words on a page, allowing for creative modes of design, production, and dissemination.
6. Critical literacies – Students are taught to think critically about the interests served by the media they encounter and the texts they produce.
7. Comparative and informal assessment – Teachers can make comparable judgments about students' texts, and students receive informal feedback from genuine community audiences.
8. Time on task – The support of the visual interface during instruction and writing can assist disengaged writers to maintain attention on the screen.
9. Distributed expertise – Learning is collaborative and distributed among peers, progressively reducing the dependence of students on the teacher.
10. Problem solving – Students are encouraged to solve design constraints and technical problems collaboratively and independently.

The pleasure of learning through iPed is reflected in Scott's blog: "What I have liked so far is using iWeb, because we learn so much.... What I have found easy is knowing how to use a laptop. What I found hard is really nothing.

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