Digital Documentation:
Using digital technologies to promote language assessment for the 21st century[*]

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Abstract

The article describes how the use of digital technologies such as iPod and iPad contributes to the gathering of tangible evidence of students' learning, and promotes the emergence of a new means of formative assessment that supports language teaching and learning for the 21st century. In particular, the use of such technologies by Early French Immersion learners promotes digital documentation (audio and video recording) of language learning across the curriculum, to help make the learning and thinking process more visible to teachers and students. The process of revisiting the digital documentation constitutes a new means of formative assessment that informs both the teaching and the learning. Moreover, the use of digital technologies allows students to become active participants in their own learning and assessment process. Finally, the article examines the role of oral language in the digital documentation and revision process, and how this enhances the assessment of students' learning in the 21st century language classroom.

Key words: Digital technologies; formative assessment; Early French Immersion; digital documentation; oral language

Résumé

Cet article décrit la contribution de technologies numériques telles qu'iPod et iPad à la documentation et à l'évaluation formative de l'apprentissage des élèves, et à l'enseignement et à l'apprentissage des langues au XXIe siècle. Plus précisément, il montre que l'emploi de ces technologies par des apprenants en immersion française précoce favorise la documentation numérique (l'enregistrement audio et vidéo) de l'apprentissage linguis-

tique dans l'ensemble des matières scolaires afin de rendre plus évidents aux enseignants comme aux élèves les processus d'apprentissage et de raisonnement des élèves. Le retour pratiqué sur la documentation numérique constitue un nouveau moyen en enseignement, en apprentissage et en évaluation formative qui permet aux élèves d'apprendre et de s'autoévaluer plus activement. Enfin, l'auteure examine le rôle de l'oral dans la documentation numérique, le processus de la révision et l'évaluation des apprentissages dans la classe de langue au XXIe siècle.

Mots-clés : Technologies numériques ; évaluation formative ; immersion française précoce ; documentation numérique ; langage oral

Introduction

There is a great deal of research in the field of education that supports the use of technologies to enhance students' language learning. Many studies have also been concerned with the potential of new technologies in assessment practice (e.g., Chalhoub-Deville, 1995; Chapelle, 2001, 2003; Chapelle and Douglas, 2006; Nicol and Macfarlane-Dick, 2006). Most of the research has focused on computer-based assessment (CBA) — e.g., Chapelle (2001) and more recently, on the notion of e-assessment — and tends to deal with higher education and high school students. However, the pedagogical shift toward the adoption of digital technologies into language classrooms, particularly in the elementary grades, is bringing about changes in the way educators perceive students' learning and assessment. Educators are starting to contemplate the potential of the emergent digital technologies to support new forms of assessment that promote not only the gathering of evidence of students' learning, but also the engagement of the students as active agents in the assessment process (McMillan and Hearn, 2008).

The use of digital technologies such as the iPod and iPad in the elementary classroom also demonstrates the potential to support and advance the concept of pedagogical documentation inspired by the Reggio Emilia approach (Rinaldi, 2001, 2004) as a form of formative assessment. The concept of documentation promotes the gathering of an authentic record of the learning that takes place in the classroom. Documentation involves the gathering of tangible evidence (e.g., photographs, audio recordings and video) of the students' learning process and learning strategies. As a formative tool, documentation allows teachers to reflect on how students construct their knowledge and understanding; it also allows them to examine the appropriateness of their own pedagogical practices for responding to the needs of diverse learners. As the teacher and students revisit the content of the documentation, the learning process is also made visible to the students, allowing them to assess their knowledge building process while interacting with others.

Literature review and background

Assessments for the 21st century

Student assessment is central to teaching and learning in 21st century, and needs to be understood as the "cornerstone of effective teaching and learning" (Partnership for 21st Century Skills, 2007, p. 1). Unfortunately, the standardized summative assessment and classroom-based testing that have dominated our educational system for the past decades are concerned mainly with measuring the level of students' achievement. These summative assessment tools focus on the products of learning and contribute little to inform the instructional practice so that students' learning can be improved. Assessment for 21st century learning and teaching requires a shift from assessment *of* learning toward assessment strategies *for* learning (Stiggins and Chappuis, 2006), to make students' learning and understanding visible so that teachers can adapt their instructional strategies to meet student needs (Collins, Brown and Holum, 1991; Feld and Bergan, 2002; Partnership for 21st Century Skills, 2007; Silva, 2008; ATC21S Project, 2010). It is therefore necessary to place a greater emphasis on the transparency of the learning process by revealing not only what the learners know but how they construct their knowledge and understanding.

Assessment for 21st century learning also requires greater involvement on the part of the students in reflecting on what and how they are learning, and self-assessment therefore becomes a crucial tool. Research in the field of assessment has demonstrated that self-assessment holds great potential for improving students' engagement and learning (Rolheiser and Ross, 2003; McMillan and Hearn, 2008; Bingham, Holbrook and Meyers, 2010). Self-assessment — the process by which students judge the quality of their work in order to improve it in the future (Rolheiser and Ross, 2003) — calls on the use of metacognitive tools and involves "the capacity to monitor, evaluate, and know what to do to improve performance" (McMillan and Hearn, 2008, p. 2). Self-reflection plays a critical role in the self-assessment process (McMillan and Hearn, 2008), by helping students identify what they are doing well and which aspect of the learning requires improvement. Finally, in providing students with a voice in and ownership of their learning (Bingham et al., 2010), self-assessment promotes teaching and learning for a new era by having students share responsibility for the assessment of their learning process.

Documentation and assessment

Although the word *documentation* is found in the literature concerned with assessment in the 21st century, the concept itself is far from new, having appeared more than half a century ago in the work of Loris Malaguzzi, the founder of the Reggio Emilia approach (Rinaldi, 2004). Malaguzzi's approach was de-

veloped after the Second World War in Italy and was later introduced to the North American educational context. Although documentation in the educational context was first used with preschool and kindergarten children, its value as a rich and powerful way of gathering evidence and authentic knowledge about the students' learning process has influenced other educational contexts (see, e.g., Wien, 2008; Cox Suárez and Daniels, 2009). The concept of documentation needs to be understood as the *construction of traces* (Rinaldi, 2001) that make the learning visible to teachers and learners, thus making the processes of revisiting, interpretation, self-reflection and self-assessment about the learning possible. This concept has helped educators to better understand the relationship between learning and teaching (Gandini and Kaminsky, 2004; Rinaldi, 2004), because tangible evidence of the learning can be used to guide the teacher's instruction, and also to inform learners about their own learning process. Therefore, the documentation process needs to be viewed as an integral part of both teaching and learning (Rinaldi, 2004). Documentation has also been described as a form of formative assessment that makes learning concrete and visible to the teachers, learners and parents (Rinaldi, 2001; Trepanier-Street, Hong and Bauer, 2001; Carr, 2005; Krechevsky, Rivard and Burton, 2010).

Documentation captures the learning process and can be later revisited by both the teachers and the learners, allowing for a deepening of the learning (Krechevsky et al., 2010); it also allows the students to have a voice in the interpretation of their progress.

Digital documentation

Technologies such as digital video recorders and digital cameras have demonstrated their potential as new tools to assist in the documentation of students' learning (Boardman, 2007; Cox Suárez and Daniels, 2009; Cox Suárez, 2010). These new technologies have made it possible for teachers and learners to revisit the gathered documentation and to engage in a dialogue and interpretation process about it (Boardman, 2007). These devices also demonstrate potential as tools that contribute not only to making students aware of their own learning, but also to their becoming actively engaged in both documenting and interpreting the content.

As Rinaldi (2001, p. 4) explained, "*to learn* is strongly related to *to communicate*," and dialogue plays a crucial role in the revisiting of the documentation. The importance of listening to the other's representation of their own understanding and interpretation is central to the concept of documentation (Rinaldi, 2001). In addition, when learners work together in revisiting the documentation, observing the learning of others helps them to reflect on their own learning (Rinaldi, 2001). The user-friendly new digital technologies allow even

young learners to be in charge of documenting their own learning and thinking process. Moreover, the easy access to the digitally recorded content (fast-forward, rewind, skipping forward, etc.) makes it possible to engage in reflection, dialogue, and interpretation in an ongoing manner. Among themselves, students can also use digital technologies to engage in peer assessment and become active participants in the assessment of their learning. Therefore, the use of digital technologies can support the documentation process, which in turn can promote new formative assessment tools for teaching and learning in the 21st century.

Methodology

The study was informed by a qualitative, interpretative research methodology (Denzin and Lincoln, 2008) that made use of *collaborative action research* (CAR; Riel, 2010) to achieve a systematic inquiry into how the use of technologies can support differentiated instruction to meet the needs of all students in French Immersion classrooms. CAR has been shown to be transformative by engaging teachers in systemic inquiry with the goal of improving their teaching practices (Denos, Toohey, Neilson and Waterstone, 2009). It calls for direct participation from the teachers in the inquiry process, which then impacts upon the teachers' beliefs, attitudes, knowledge, and skills; such changes in turn contribute to changes in their pedagogical practices (Kemmis and McTaggart, 2005; Nolen and Vander Putten, 2007).

Participants

The study involved 16 teachers from two elementary schools that hosted Early French Immersion programs in a school district in a rural suburb of Calgary, in the province of Alberta. The distribution of the French Immersion teachers was as follows: four Grade 1 teachers, three Grade 2 teachers, one multilevel teacher (Grades 1 and 2), three Grade 3 teachers, two Grade 4 teachers and three resource teachers. Participation in the CAR was voluntary.

Design, collection and analysis of data

The CAR model used for the study was first inspired by the systemic and cyclical process proposed in action research (Riel, 2010) and adapted by the author (Pellerin, 2011). The first phase of the spiral model in action research, referred to as "study and plan," was achieved through a *collaborative professional development meeting* (CPDM). The CPDM took place four times during the first year of the study, and teachers were relieved of their regular teaching assignments for a half day in order to participate in these meetings. During these CPDMs, teachers would share their data (from the digital documentation of their students' learning process in their respective Early French Immersion

classrooms), and the group engaged in discussion and interpretation about the information gained through the digital documentation.

The initial data was collected on an ongoing basis by the teachers in their respective classrooms. Teachers gathered digital documentation (audio and video recordings) achieved by the students themselves using mobile devices such as iPods and iPads. The author was also engaged in data collection through classroom observation, and gathered anecdotes about how students were documenting their own language learning process with the use of digital technologies. The outcomes of the discussion during the CPDMs were also part of the data collection. Further data were gathered at the end of the first year of the project through semi-guided interviews with the teachers, which allowed them to share their experiences with the use of digital technologies in their classrooms. The triangulation of these data from multiple sources allowed for interpretation (Denzin and Lincoln, 2008), and continual data analysis was achieved by means of "thick description" or layers of interpretation (Geertz, 1973). The data analysis was achieved with the use of a coding process aligned with qualitative research approaches (Miles and Huberman, 1994).

Findings and discussion

Several key themes that emerged from this inquiry have contributed to the co-construction of new knowledge and understanding about how digital documentation, achieved with the use of digital technologies by young language learners, promotes the emergence of a new form of formative assessment for 21st century language learning and teaching. This section will discuss four core themes that have emerged from the data analysis:

  (a) making learning and thinking visible through digital technologies and the digital documentation process;

  (b) the revisiting process as a formative assessment that informs both the teaching and the learning;

  (c) digital documentation and the students' active participation in the assessment process; and

  (d) the role of oral language in the digital documentation and revision process.

The teacher interviews were done in French. For some of the teachers, French is also a second language. In order to honour the voice of these teachers in the process of dissemination of their new knowledge constructed in this study, the author made the ethical decision to keep the teachers' quotes in the original language.

Making learning and thinking visible

The data indicate that the use of digital technologies such as iPods and iPads by young language learners in the Early French Immersion context contributed to the gathering of authentic and ongoing evidence of students' language learning process. Although the main goal of the study was to examine the use of these technologies to support and promote differentiated learning in the Early French Immersion classroom, digital documentation as a new form of formative assessment for students' language learning process emerged from the data analysis. Because the young learners involved in the study are part of the *i*Generation (Rosen, 2010), for whom the use of technology comes to be a natural way of interacting and making sense of the world around them, the integration of digital technologies into their language classroom was well received and became, for some of the students, a motivational tool to engage further in their language learning process.

The data show that the use of iPods and iPads in the Early French Immersion classroom contributed to the digital documentation of students' language learning and early literacy development in the target language. The teachers in the study demonstrated different ways of using digital technologies with their students as tools to document different aspects of learning. For example, the Grade 1 and 2 teachers indicated that they used the iPods and/or iPads to document their students' reading progress in the target language. Because the students were very comfortable using the new technologies, the teachers encouraged them to record their reading aloud on their iPods and then to listen to the recording. However, the young learners quickly became aware of the video functions of the iPods. This discovery led to a new form of digital documentation: Students not only were recording their voices while reading, but they were also video recording their reading process. Teachers now had access to tangible evidence of the mistakes the students were making, as well as evidence of how the students were trying to sound out difficult words and the types of strategies they were using to make sense of the text. The students' nonverbal language and their actions (for example, coming back to the beginning of the line to reread a word) were also captured through the video recording.

One of the Grade 2 teachers explained that the video recording made by her students made their reading process visible to her:

> Moi, j'ai pu voir quelles stratégies de lecture ils ont utilisées.[1]

A Grade 1 teacher discussed a similar experience:

> Je suis vraiment capable de voir les stratégies qu'ils utilisent ou n'utilisent pas. Quand je regarde leur vidéo, je peux voir s'ils regardent l'image et reviennent

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[1] I could see for myself what reading strategies they used.

au mot pour voir si ça fait du sens. Je peux voir s'ils reprennent la lecture. Je peux voir s'ils lisent la première lettre et devinent après cela.[2]

Grade 3 and 4 students also used iPads to practice reading aloud and to document their own reading fluency. The digital recording allowed the teacher and the students to gain authentic information about their level of reading fluency. The audio and video recording provided the teachers with visible evidence about the students' speed, accuracy and intonation while reading in the target language. A Grade 4 teacher explained that some students feel shy about reading aloud to the teacher and/or a group. The use of the iPads allowed the gathering of authentic information about students' level of reading fluency without creating a stressful situation for these students. One teacher indicated that with the use of iPads even the weak students wanted to read aloud and record their reading:

> Ils voulaient beaucoup prendre le iPad et le iPod et lire à haute voix avec ça … Ça c'était pour tout le monde mais, même tout de suite pour les enfants qui étaient plus gênés ou plus hésitants de le faire, ils n'hésitaient plus à le faire.[3]

Digital technologies were also used to document the thinking process of the students while engaged in writing activities. Some teachers indicated that some of their students found it difficult to put their ideas down on paper, especially in the target language. Students from Grades 1 to 4 used the iPads/iPods to first record their ideas about their stories and then their thinking process about how they were going to organize the ideas in order to write them down as a coherent text.

A Grade 1 teacher provided an example of writing activities that started with the recording of the students' ideas before writing them down on paper. The teacher explained that the students first drew the "pirate" character for their story on a piece of paper and then recorded the oral description — which she called "free talk" — before moving to the written phase. The students would listen to the recording and then write down their ideas. The teacher was able to listen to the students' recordings and determine the kind of vocabulary they were able to use orally before trying to transfer their ideas onto paper:

> Puis après qu'ils ont dessiné, colorié … ils ont utilisé le iPod et enregistré une description du pirate. Et, avec des phrases. Parce que l'idée c'est d'écrire des

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[2]I can really see what strategies they use or don't use. When I watch their video, I can see if they look at the image and go back to the word to see if it makes sense. I can see if they read it again. I can see if they read the first letter and then guess the rest.

[3]They kept wanting to take the iPad and the iPod and read aloud with it … That goes for all of them, even the most timid children or the ones who were unsure about doing it, all of a sudden they had no problem with it.

phrases avec des mots magiques qu'on les appelle, les mots descriptifs. Juste parler, juste "free talk" tu sais avec le iPod.[4]

Teachers in the study also indicated that allowing the students to use the iPods/iPads to first document their thinking process in the target language, before trying to write, really helped the students with their writing process. It also allowed the teacher to see what the students were able to do in terms of using vocabulary, syntax, structure and so on, by making the learning process as well as the student's knowledge of the second language visible. It was also very helpful in the case of students who were experiencing difficulties with fine motor skills that impeded their writing process. One of the Grade 1 teachers indicated that the audio recording allowed her to *see* and *hear* the students' ideas and their mapping process for the story. Such information was not visible to her in the written form because of the students' difficulties in printing letters on paper:

> J'en ai trois où écrire ... et c'est pas écrire, avoir les idées ... mais c'est écrire, former les lettres physiquement, que c'est difficile. Et tous les trois, sauf peut-être un, comme l'un que tu as vu ... il parle très bien le français. Il a un grand vocabulaire français parce que papa parle le français. Donc, c'est quelqu'un que si je parle il est capable de formuler des histoires ... Mais oui. Mais sur papier, je ne peux pas voir ça.[5]

Another Grade 1 teacher explained that she started using the iPods to document the learning and thinking process of her students during learning centre activities. Because she was not able to observe all the students at each learning centre at the same time, she needed to have some kind of evidence, or documentation, of what students were able to do, especially in the math centre, where students needed to solve different types of problems. The audio recording allowed her to see if they understood these challenging problems and if they were able to solve them.

> Alors là, s'ils enregistrent leurs réponses, tu peux savoir s'ils ont compris parce que ce genre de problèmes-là, je trouve c'est un peu plus difficile ... tu vois? Voir s'ils ont la notion de résoudre les problèmes plus difficiles, mais au moins

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[4]So after they drew and coloured ... they used the iPod and recorded a description of the pirate. In sentences. Because the idea is to make the sentences with so-called magic words, descriptive words. Just talking, just free talking, you know, with the iPod.

[5]I have three for whom writing ... and I don't mean writing as in having ideas ... but it's the writing, physically forming the letters, that's difficult. And all three, except maybe one, like the one you saw ... he speaks French very well. He has a large French vocabulary because Dad speaks French. Anyway, he's someone who if I say he's capable of writing stories ... For sure. But on paper, I can't see it.

s'ils s'enregistrent … à la fin de la journée, tu peux les écouter, tu peux savoir comment ils ont réglé … s'ils ont été capables de régler le problème.[6]

The revisiting process as a formative assessment

The data demonstrated that the use of digital technologies contributed to gathering digital documentation about the students' learning and thinking process. Moreover, it enabled both teachers and learners to revisit the digital documentation, allowing for a deepening of the learning process as found in other studies (e.g., Boardman, 2007; Cox Suárez and Daniels, 2009). The revisiting process also promoted a process of reflection *on* learning by the teachers, which acts as a form of formative assessment. Such assessment informs teachers about their students' language competency in the target language, as well as their knowledge and understanding across the curriculum. In turn, the information gained through the digital documentation process provides valuable information that holds potential for further guiding the teaching. One Grade 1 teacher indicated that the revisiting of the digital documentation allowed her to determine what kind of strategies each student was able to use, and which strategies needed to be reviewed with the student so that she could individualize her teaching to a greater degree:

> Je peux vraiment voir où est chaque élève dans leur développement de stratégies de lecture. Ok, j'ai regardé la vidéo de cet élève et je sais qu'avec cet élève je dois travailler cette stratégie de lecture. Alors, ce n'est pas de toujours enseigner en grand groupe, les mêmes stratégies.[7]

A Grade 2 teacher explained that, by being able to revisit the digital documentation with the students, she was able to assess the students' understanding and to provide scaffolding to better support their learning process:

> Alors, c'est comme chaque élève reçoit leur propre petite mini-leçon parce qu'on regarde leur vidéo ensemble et on dit "vois-tu? tu pourrais faire ça à ce point-là pour trouver le mot ou pour bien lire le mot" ou "qu'est-ce que tu as bien fait ici?" pour renforcer les stratégies qu'ils commencent à utiliser un tout petit peu alors.[8]

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[6]Okay, if they record their answers, you know whether they understood because that kind of problem, I've found that it's a bit more difficult … you know? To see whether they have an idea of how to solve the most difficult problems, but at least if they record themselves … at the end of the day, you can listen to them, you can find out how they handled … if they were able to handle the problem.

[7]I can really see where each student is in their development of reading strategies. Okay, I watch the video of this student and I know that with this one I have to work on this reading strategy. I mean, not always teaching in large group, the same strategies.

[8]So it's like each student gets their own little mini-lesson, because you watch their video together and you say "you see? You could do that at that point to find the word,

The revisiting of the documentation between teacher and student also provided scaffolding for self-assessment and peer assessment. By engaging students in revisiting the content of the digital documentation, the teacher modeled the process of reflection and self-assessment necessary for the students to become aware of their own learning process and progress. Some teachers indicated that they first modeled the revision process as a whole class activity in order to scaffold the reflection process that students would need to engage later on in their self-assessment of their own digital documentation. One Grade 1 teacher shared her approach to modeling the self-assessment process with her young language learners in large group activities while revisiting their video recordings. She focused on helping them analyze their work in terms of aspects they felt they were successful with (stars) and aspects that needed to be improved (wishes):

> On a commencé cette réflexion en grand groupe. Alors on regardait les vidéos ensemble, et on faisait pour chaque élève qui a montré leur vidéo. . . 2 étoiles et un souhait. Deux choses qu'ils ont très bien faites dans leur vidéo et une chose qu'ils pourraient améliorer la prochaine fois. Alors comme ça, c'était la discussion. Est-ce qu'on dit beaucoup. . . seulement les choses qu'ils n'ont pas bien fait. Est-ce qu'on partage seulement les choses qui sont très bien . . . Non, ça doit être un équilibre entre les deux.[9]

Digital documentation and student self-assessment

The data demonstrate that the use of digital technologies allowed students to gather their own evidence of their learning process and to become active participants in the process of revisiting and self-assessment of it. The study provides ample evidence that students were able to engage in self-assessment about their learning. Many teachers indicated that the use of the digital technologies enabled their students to take charge of giving value to their own work and to become responsible for setting their own goals to improve it. A Grade 1 teacher explained that, with the video and/or audio recording, the students viewed/listened to their work and decided what was good and what needed to be improved, without having their teacher make the first judgment:

> Ils peuvent effacer, ils peuvent enregistrer par dessus . . . ils peuvent . . . je trouve que juste cela fait que c'est l'enfant qui décide. Ce n'est pas le professeur

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or to read the word" or "what did you do well here?" to reinforce the strategies that they're already beginning to use a little.

[9]We began this reflection in large group. So we watched the videos together, and for each student whose video we watched we gave . . . 2 stars and a wish. Two things that they did very well in their video and one thing that they could improve the next time. So that way there was a discussion. Do they talk a lot about . . . just the things they didn't do well. Do they share only the things that are very good. No, there has to be a balance between the two.

qui décide. C'est informel, et puis c'est formatif aussi. Et puis, c'est le fait que c'est l'enfant qui décide qu'est-ce qui est bien fait le même à aller plus loin avec son apprentissage aussi. Ce n'est pas nous qui décidons. On peut faciliter ça, mais c'est vraiment géré un peu par l'enfant.[10]

Another Grade 1 teacher added that students became more aware of how they spoke and wrote. She explained that before using the digital technologies, the students would rely on her to provide feedback on the quality of their work. She also said that now they would judge their work even before they handed it in to her:

> Je trouve qu'ils sont beaucoup plus conscients de comment ils parlent et de comment ils écrivent. Parce qu'avant, c'était juste comme "oh madame. Tu me dis si c'est bien fait ou pas bien fait." Mais maintenant, c'est eux. Et même maintenant, quand c'est les évaluations de l'écriture formelle, ils vont me donner la feuille et dire "je sais que ce n'est pas mon meilleur travail madame. Je pourrais mieux faire."[11]

One of the Grade 3 teachers observed that students would share their recordings of their own stories and provide each other with comments that she valued as being well thought out:

> Aussi, quand nous avons enregistré comme les histoires sur le iPad ou le iPod ... les élèves ont aussi partagé ces histoires aux copains et puis, il y avait des commentaires tellement bien réfléchis ...[12]

The process of revisiting the digital documentation achieved by the learner is more than "judging" the quality of the work according to explicit criteria (Rolheiser and Ross, 2003). Through the revision process with the teacher and/or with their peers, the students become aware of their own learning process and become their own observers of how they are learning. They also become aware of their learning strategies, thinking process and the way they construct their own understanding, as well as how they co-construct their knowledge with their peers. Through the process of documenting and revisiting, students become the ethnographers of their own learning process.

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[10]They can erase, they can record over ... they can ... I find, that in itself makes it so it's the child who decides. It isn't the teacher who decides. It's informal, and it's also formative. And, the fact that it's the child who decides what's good helps the learning progress further. We aren't the ones who decide. We can facilitate it, but it's really kind of directed by the child.

[11]I find that they're very aware of how they speak and how they write. Because before it was just, "oh madame. You tell me what I did well or didn't do well." But now, it's up to them. And even now, when it's the formal writing evaluations, they'll give me the paper and say "I know this isn't my best work madame. I could do better."

[12]Also, when we recorded the stories on the iPad or the iPod ... the students shared the stories with their classmates, and there were some really well thought out comments.

The role of oral language in digital documentation

The data demonstrate that with the use of digital technologies, oral language becomes a crucial tool through which the learning and thinking process becomes visible. The oral language contributes to the gathering of information, which depicts another facet of the students' learning that is not visible in the written form. A resource teacher explained:

> Parce que si tu vois l'enfant d'une façon, si tu identifies l'enfant vis-à-vis juste son écriture, tu ne connais pas l'enfant. Ce n'est pas l'enfant. C'est un facteur. C'est une facette … oui … de l'enfant. Donc, l'oral nous donne une autre optique de qui est cet apprenant je trouve.[13]

Oral language also plays a key role in the revision process by acting as a tool for reflection and assessment. Moreover, the findings support the notion that oral language — including listening and speaking — becomes interwoven in the revisiting process. The listening supports the reflection and thinking process as well as the dialogue (or talk) between the teacher and the student:

> Ils avaient la chance d'écouter l'un l'autre la lecture qu'ils ont faite. Et peut-être relire … ou peut-être faire un petit jugement eux-mêmes sur leur lecture. Comme ça, tu peux leur demander "qu'est-ce que tu penses de ta lecture? Qu'est-ce que tu as besoin de faire pour améliorer ça ?"[14]

One of the Grade 1 teachers became aware of the effort required by her young second language students to express their thoughts in the target language, and saw the value for her students of listening to the audio recording in order to review what they had said and to engage in a process of self-assessment:

> Quand tu fais tout ton travail pour exprimer ce que tu veux dire, c'est difficile à réfléchir sur ce que tu as dit parce que ça a pris tout ton effort pour le dire. Alors, pour s'écouter par après, ou pour voir par après … tu vois vraiment ce que tu as bien fait et ce que tu peux améliorer.[15]

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[13]Because if you see the child a certain way, if you define the child according to his or her writing, you don't know the child. That is not the child. It's a factor. It's a facet … yes … of the child. So I find that the oral work gives us another view of who this learner is.

[14]They had the chance to listen to each other's reading. And maybe reread … or maybe do a little assessment of their own reading. That way, you can ask "what do you think of your reading? What do you need to do to make it better?"

[15]When you put all that work into expressing what you want to say, it's difficult to reflect on what you've said because it took all your energy just to say it. So, by listening to it later, or looking at it later, you really see what you've done and what you can improve.

Through listening to their own recordings, students were able to reflect on their work and to judge what was good about it and what needed to be improved.

A Grade 2 teacher also provided examples of how listening helped her students to assess their use of the French language and to provide some corrections:

> Le fait de s'écouter et d'écouter voir si c'est leur voix premièrement, leur français, s'ils avaient des mots en anglais. Et aussi de voir si la structure de la phrase était une bonne structure. Si c'était logique. Puis de s'auto-évaluer, de pouvoir revenir puis de faire des corrections par eux-mêmes.[16]

This teacher explained that, in some of the classroom activities, her students would first use the oral language to map out their ideas about their story. Then they would record their ideas with the iPods. Once they were finished recording, they reviewed their work as a group by listening to their own recording in order to evaluate the quality of their group work. Listening allowed students to engage in a conversation about what appeared to be coherent and make sense, and what needed to be changed or improved. Sometimes the students would make a second recording to improve their first work:

> Avec un début, milieu, fin. Fait qu'ils devaient parler ensemble pour savoir qui allait commencer, qui allait continuer et qui allait finir, et comment allait être leur histoire. Après avoir parlé ensemble, puis essayé quelques fois, ils se sont enregistrés avec le baladeur pour voir si c'était logique. Fait qu'ils ce sont enregistrés, ils se sont écoutés, pis par la suite ils ont fait des changements et peut-être même réenregistré.[17]

The analysis of the data provides evidence that dialogue also plays a major role in the revisiting process between peers. Teachers indicated that students were able to engage in conversations with each other about their ongoing work in order to co-assess its quality and to reflect on how they could improve it. It was through these conversations with the "others" (Rinaldi, 2004) that the reflection and thinking process became visible to others and the learners learned about their own learning process. In the following excerpt, a Grade 2 teacher indicated that her students would get together to talk about the writing of their

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[16]The act of listening to themselves and listening to see if it's their voice first, their French, if they used any English words. And also seeing if the sentence structure was good. If it made sense. Then to self-assess, to be able to come back and do the corrections themselves.

[17]With a beginning, middle, end. So they have to talk to each other to know who was going to start, who was going to continue and who was going to finish, and what their story was going to be like. After talking about it, and trying a few times, they recorded it to see if it made sense. So they recorded it, they listened to themselves, then they made the changes and maybe even rerecorded it.

stories, and would share their thoughts about them and try to explain to others how they could be improved:

> Ils vont se rencontrer et puis ils vont partager ce que chacun pense de l'autre histoire, pis là ils vont essayer d'expliquer ce qu'ils peuvent améliorer de leur propre histoire.[18]

Thus, the oral language acts as a metacognitive tool (McMillan and Hearn, 2008) to help students to reflect on their own learning process as well as to engage in dialogue with teachers and peers about their own learning. Through discussion and interaction with others using oral language, students engaged in a conscious process of reflection, monitoring, and evaluating, as well as deciding what needed to be changed in order to enhance the quality of their work.

Conclusion

Rinaldi (2004) suggested that documentation is the genesis of assessment. Moreover, documentation becomes the central point of reference (Cox Suárez and Daniels, 2009) where the dialogue, interpretation, reflection and inquiry about the learning begin. The use of iPods and iPads in the language classroom allows for the gathering of digital documentation that makes the learning and thinking visible to both the teachers and learners, which in turn informs both the learning and the teaching. Moreover, it allows the students to become active participants in the assessment process as well as having their voice heard in the interpretation of their learning. By involving the students in the documentation and revision process, the assessment becomes more democratic (Rinaldi, 2004) and more aligned with teaching and learning that aims at greater equity and social justice. The use of oral language with the new technologies also becomes a powerful tool in the documentation and revisiting process, as talking and listening to others helps students to learn about their learning (Rinaldi, 2001).

New forms of assessment are critical for responding to teaching and learning in the 21st century (Silva, 2008). In the context of language learning, alternative forms of assessment are needed to better monitor and improve the students' language learning process as well as to guide teaching practices that will respond to the needs of all 21st century learners. Digital documentation as a new form of assessment will require a paradigm shift in the way language educators perceive assessment. It will also require a greater understanding about how assessment and instruction are interwoven (Rinaldi, 2004) and how documentation using digital technologies contributes to informing both learning and teaching. Moreover, language teachers will need to recognize that

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[18]They'll get together and then they'll share what each one thinks about the other's story, then they'll try to explain what they can improve in their own story.

the electronic era creates new opportunities related to the use of technologies that benefit language learning and teaching in the 21st century.

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