# Unit 3 – Final Assignment: Classroom Technology Plan

**Theressa François**

**Cape Breton University**

**Terry MacDonald**

**EDUC5106:91: Technology Planning for Educational Environments**

**8 April 2018**

## Introduction

As technologies have emerged over the last century, educators have attempted to harness them with the goal of improving student academic outcomes (Salaberry, 2001). Early attempts at integrating digital technologies were often centred on teaching students how to use technologies, rather than as a tool for learning (Thouësny & Bradley, 2011). Computer assisted language learning (CALL) proponents recognize that digital technologies provide "the capabilities for presenting authentic whole texts contextualized by images and other graphics, for trial and error attempts at learning, for branching, for circuitous forms of learning, and for recycling of the material in a myriad of ways" by learners (Stepp-Greany, 2003, para. 13). Applied correctly, digital technologies are an effective tool for enhancing second language learning outcomes.

Moreover, learning outcomes in blended and hybrid technology implementation environments have been shown to eclipse those of either face-to-face or strictly online modalities (Prokhorets, Plekhanova & Scherbinina, 2015; Huot, Lemmonier & Hamers, 2008; Kelly, Kennell & McBride, 2007). Blended and hybrid models meld the best aspects of face-to-face interaction with the enhanced access to resources and tools afforded by digital technologies, resulting in improved knowledge acquisition and greater student satisfaction (Hsueh, 2011; Li, Yao & Hong, 2016). These features make blended and hybrid learning modalities an excellent instructional strategy in a content-based French Immersion learning context.

## Vision

Educators now recognize that digital technologies must serve to reinforce and to support sound pedagogical practices, not to replace them (de Cássia Veiga Marriott & Lupion Torres, 2009). This classroom-level technology plan is not focused on learning technological skills for their own sake, but rather on the application of digital technologies toward improving knowledge acquisition, enhancing second language proficiency, and developing lifelong self-directed learning competencies. This plan

adopts a constructivist learning approach in that it uses technologies for the purposes of engaging students with authentic, meaningful learning materials and enabling them to become active participants in the learning process rather passive recipients of instruction.

## Intervention Goals, Objectives & Strategies

This Technology Plan has been developed for implementation in a publicly-funded grade 4 French-Immersion classroom in Winnipeg, Manitoba. Students in Manitoba French Immersion classes are expected to tackle all subjects aside from English Language Arts in French, and they are expected to interact with instructors and peers in that language as well. The Lesson Plan attached to this paper (Appendix A) examines technology interventions for use during Science class, in particular the animal Habitats and Communities module of the grade 4 curriculum (Éducation, 2000).

The following technology goals are partially adapted from the Manitoba grade 4 science curriculum (Manitoba, 1999), as well as its French Immersion equivalent. Goals not touched on in the curriculum, but added to this technology plan, involve technological skills, digital citizenship, and French vocabulary acquisition. The table has also been designed to function as a formative and summative technology plan assessment tool.

| **2018-19 GOALS, OBJECTIVES, & INSTRUCTIONAL STRATEGIES** | | | |
|---|---|---|---|
| Instructions – Circle the most appropriate number:<br>3 - The condition is in place. 2 - Approaching condition implementation. 1 - The condition is not in place. | | | |
| **Goal 1 – Accessing technologies: Students demonstrate effective technology skills and behaviours.** | | | |
| **3** | **2** | **1** | **Instructor strategies:** |
| **Objective 1:** Students access technologies effectively to meet their learning needs. | | | |
| | | | Evaluate student access to the Internet and to Web-enabled devices. |

| | | | |
|---|---|---|---|
| | | | Select online tools that are accessible from a variety of the most common Web-enabled devices. |
| | | | Set up and monitor student accounts for online tools. |
| | | | Ensure that students can log into divisional servers, learning management software, and online tools from a variety of Web-enabled devices. |
| **Objective 2:** Students use technologies effectively and efficiently to meet their learning needs. | | | |
| | | | Select tools with intuitive and accessible interface designs. |
| | | | Instruct students in the effective use of search engines. |
| | | | Instruct students in effective file management techniques (folders, file naming, extensions) |
| | | | Select tools for developing student keyboarding skills (Typing.com). |
| **Objective 3:** Students exercise judgement when using technologies (digital citizenship). | | | |
| | | | Select appropriate learning materials and demonstrate the selection process to students. |
| | | | Demonstrate the critical thinking process to students when evaluating online sources. |
| | | | Respect copyright laws, demonstrate and instruct copyright compliance to students. |
| | | | Model respectful discourse face-to-face and online, and devise a netiquette policy with students. |
| | | | Protect student privacy online and instruct students in techniques for protecting their privacy while accessing the Web. |
| **Goal 2** – Scientific inquiry: Students use technologies to address questions about natural phenomena, involving broad explorations as well as focussed investigations. | | | |
| **3** | **2** | **1** | **Instructor strategies:** |
| **Objective 1:** Students use technologies to access lesson materials in a variety of contexts. | | | |
| | | | Post materials in Blackboard LMS that enhance lessons and allow students to review material as needed. |
| | | | Link to vetted learning materials and resources in Blackboard LMS. |

| | | | |
|---|---|---|---|
| | | | Post instructions for learning activities in Blackboard LMS as well as examples of previous work to inspire and inform student work. |
| **Objective 2:** Students use technologies to access subject-related media. | | | |
| | | | Select online videos and/or audio recordings that enhance concept understanding and acquisition. |
| | | | Direct students to trustworthy and engaging sources of scientific information. |
| **Objective 3:** Students use technologies for making scientific observations. | | | |
| | | | Identify Webcams that enable direct scientific observation of animals in a variety of habitats. |
| | | | Utilise satellite imagery to detect patterns in Earth's natural features as well as evidence of human impacts on the environment. |
| | | | Encourage and enable the use of digital photography as an observational tool. |
| **Goal 3** – Technological problem solving (design process): Students use technologies to solve practical problems requiring the application of their science knowledge in various ways. | | | |
| **3** | **2** | **1** | **Instructor strategies:** |
| **Objective 1:** Students use technologies to create original materials for publication to a wider audience. | | | |
| | | | Familiarise students with digital photography and editing tools (Adobe Photoshop). |
| | | | Familiarise students with pre-installed video recording and editing tools (Movie Creator). |
| | | | Familiarise students with online and pre-installed audio recording (podcasting) and editing tools (Windows Voice Recorder, Voki.com). |
| **Objective 2:** Students use technologies to organise information and to construct meaningful understanding of scientific concepts. | | | |
| | | | Familiarise students with desktop publishing tools (Microsoft Word, Publisher, Adobe Photoshop). |
| | | | Familiarise students with online and pre-installed digital presentation tools (PowerPoint, Powtoons.com). |
| | | | Familiarise students with online and pre-installed concept-mapping tools |

| | | | |
|---|---|---|---|
| | | | (Microsoft Word, Popplet.com). |
| **Goal 4** – Decision making: Students use technologies to identify issues and to pursue science knowledge that will inform the issues. | | | |
| **3** | **2** | **1** | **Instructor strategies:** |
| **Objective 1:** Students use technologies to identify and to research current issues related to animal habitats and communities. | | | |
| | | | Identify vocabulary and concepts necessary for an effective Web search on a particular issue. |
| | | | Demonstrate the selection of materials that discuss a particular issue from a variety of perspectives. |
| **Objective 2:** Students use technologies to test hypotheses through simulations and games. | | | |
| | | | Identify games and simulations that encourage students to experiment with scientific concepts. |
| **Objective 3:** Students discuss and share their findings through online technologies. | | | |
| | | | Encourage students to share their observations and their opinions online using a variety of formats (text, audio, video). |
| | | | Encourage students to view and to respond to their instructors' or peers' online contributions (forum posts, wikis, online glossaries, discussion threads). |
| | | | Encourage students to contribute their knowledge by authoring posts on shared wikis and/or glossaries. |
| **Goal 5** – Scientific vocabulary (French Immersion): Use technologies to acquire and to master French language vocabulary associated with each cluster. Strategies are aligned with the ARCC framework of SLA technology selection (Annex 2). | | | |
| | | | Select French language learning materials for student consumption. |
| | | | Create and select games and tools that enhance student recall of French language vocabulary terms. |
| | | | Select accessible and intelligible French language learning materials to enhance student comprehension of learning materials. |
| | | | Favour tools that encourage students to create original materials that incorporate newly-acquired French vocabulary terms. |

## Existing Technology Infrastructure

A large number of technological resources required for plan implementation are already in place at the classroom, institutional, and divisional levels. The technology plan has been designed to maximise use of existing resources:

**Provincial Inventory**

- Blackboard Learning Management System

**Divisional Inventory**

- Windows 365 Suite
- Dedicated IT department
- Surplus technology inventory (variable)

**School Inventory**

- High speed WiFi
- Ethernet
- 3 laptop carts (roughly 25 computers per cart of varying quality)
- Shared printer and photocopier
- Digital cameras
- iPad tablet
- Part-time teacher/librarian

**Classroom Inventory**

- Instructor desktop computer
- Overhead digital projector
- Mimio electronic whiteboard
- Webcam
- Microphone

**Instructor Inventory**

- Laptop with integrated Webcam and microphone
- Smartphone
- Typing.com teacher account

**Student Inventory**

A home technology assessment survey (see Appendix C) will be sent to each household at the beginning of the school year to determine student access to the Internet, Web-enabled devices, and other digital tools. This classroom educational technology plan has been designed under the assumption that many students will have limited access to digital technologies at home but it can be adapted to include more or less technology interventions depending on home technology assessment results.

**Additional Software Requirements**

Most of the resources required in this technology plan are pre-installed, already paid, or free. Some online tools include embedded ads as an income source or they disable or limit document saving, however. The following online tools will require paid classroom accounts to remove embedded ads and to access student management tools.

- PhET.colorado.edu
- Popplet.com
- Voki.com

**Additional Hardware Requirements**

Although this classroom technology plan does not require unlimited student access to computers, enhanced access to laptops and Web-enabled devices would be an asset, particularly if additional subjects are moved to a hybrid delivery model in years 2 and 3 of the implementation plan. School computer carts are shared between several classes, ruling out daily access to any individual cart. One solution would be to procure surplus divisional computers, if possible.

Another option is the Computers for Schools Manitoba (https://www.c4smb.ca/) program. This organisation collects and distributes donated and refurbished computers and laptops to qualifying Manitoba schools for fees ranging from $10 to $110 per unit.

Pending divisional approval, this could be a viable option for greatly improving student access to technology interventions.

## Budget & Funding

Budget requirements for this technology plan are relatively paltry, although the implementation of additional modules and subjects may increase costs, particularly if supplementary computers or Web-enabled devices are required.

| Technology | Unit cost | Qty. | Total | Classroom application |
|---|---|---|---|---|
| PhET.colorado.edu | Free (donations welcome) | -- | 38.35$ CAD | Excellent simulations explaining a variety of science concepts available in a number of languages |
| Voki.com (ad-free classroom account) | 40$ USD | 1 | 51.14$ CAD | Voice-activated online avatar application can be used in the place of student video, but still requires French language audio or text input. |
| Popplet.com (ad-free classroom account) | 2$ USD | 25 | 64$ CAD | Intuitive concept mapping tool used for several activities |
| TOTAL ONLINE TOOL ACQUISITION COSTS | | | 153,49$ | |

**Funding Sources**

- Classroom budget: Money may be available to reimburse classroom technological expenses provided that basic infrastructure needs (furniture, repairs) have been met. Funds are released at the principal's discretion.
- Parent committee: Roughly $100 per teacher is available from the school's parent committee, possibly more depending on teacher requests.
- Manitoba Teachers' Society Public Relations Grant: Funding for the full amount may be available depending on the number of requests received in a school year.

- Éducateurs francophones du Manitoba: This French language teachers' organization provides up to $1500 per school every two years. Teachers accessing these funds must publicly promote the ÉFM in return.
- Classroom fundraising: In a class of 25 students, each student would only need to raise approximately $6 to cover anticipated yearly costs of plan implementation. Ongoing costs in years 2 and 3 would amount to less than $5 per student. These funds could be raised by selling baked goods, crafts, or services to fellow students, teachers, or parents.
- Student fees: One final option to consider would be a levy charged to families at the beginning of each school year.

## Professional Development

A technology readiness assessment tool has been developed to identify instructors' professional development needs (Appendix D). A completed form (Appendix E) has been used to establish training needs in year 1 of the technology plan according to three main categories of professional development (Jones & Dexter, 2014). Training in the Blackboard learning management system (LMS) will be the most pressing challenge during the first months of implementation. Additional training in constructivist educational methodologies and techniques would also be desirable.

**Formal professional development (PD) and PLCs (Professional Learning Communities):**

- Divisional PD events.
- SAGE conference 2018: http://www.mbteach.org/mtscms/category/sage/.
- Manitoba Teachers' Association PD events: http://www.mbteach.org/mtscms/2017/05/02/pd-workshops/
- Manitoba Association of Computing Educators conferences and PD events: http://www.manace.ca/mts-dp-day/sage/.
- Science Teachers' Association of Manitoba conferences and PD events: http://stam.mb.ca/sage/.

- Identify off-site commercial professional development opportunities and apply for divisional and union PD funding.

**Informal PLCs (Professional Learning Communities):**

- Re-establish and lead a school-wide professional learning community for pooling shared knowledge on ICT implementation and pedagogic approaches.
- Identify stakeholders for membership within the group, to coordinate meeting times, and to facilitate communications.
- Ensure that all stakeholder's voices are considered.
- Invite outside experts and mentors to PLC meetings or connect online to share knowledge with the group.

**Independent Learning Activities:**

- Seek out online resources for staying abreast of pedagogical research and best practices, as well as trends in ICT literacy, new techniques and tools.
- Join professional organisations.
- Sign up for professional newsletters.
- Join online forums and webinars.
- Identify and establish links with potential mentors in the field of technology implementation.
- View online tutorial videos.

## Implementation Timeline

Technology plans for each subject will be developed on a modular basis (one cluster or term at a time), with one subject implemented per academic year. This process may be accelerated to include more subjects depending on how smoothly implementation progresses in the first year. Science, Social Studies, and Français have been chosen as the first subjects for technology plan implementation as they are (anecdotally) the most difficult to teach in a French Immersion context.

| YEAR 1 | |
|---|---|
| Term 1 | • Install and test new technology acquisitions.<br>• Implement and test term 1 (Science) technology plan.<br>• Develop term 2 (Science) technology plan. |
| Term 2 | • Implement and test term 2 (Science) technology plan.<br>• Re-establish school-based technology PLC.<br>• Develop term 3 technology plan. |
| Term 3 | • Implement and test term 3 (Science) of technology plan.<br>• Develop term 1 (Social Studies) for upcoming academic year.<br>• Identify necessary technology acquisitions, upgrades, or deletions for upcoming academic year.<br>• Secure funding for technology acquisitions and upgrades for upcoming academic year. |
| **YEAR 2** | |
| Term 1 | • Install and test new technology acquisitions.<br>• Implement and test term 1 (Social Studies) technology plan.<br>• Develop term 2 (Social Studies) technology plan. |
| Term 2 | • Consider elaborating school-wide technology vision in conjunction with PLC and administration.<br>• Implement and test term 2 (Social Studies) technology plan.<br>• Develop term 3 (Social Studies) technology plan. |
| Term 3 | • Implement and test term 3 (Social Studies)<br>• Develop term 1 (Français) for upcoming academic year.<br>• Identify necessary technology acquisitions, upgrades, or deletions for upcoming academic year.<br>• Secure funding for technology acquisitions and upgrades for upcoming academic year. |
| **YEAR 3** | |
| Term 1 | • Install and test new technology acquisitions.<br>• Implement and test term 1 (Français) technology plan.<br>• Develop term 2 (Français) technology plan. |
| Term 2 | • Consider initiating action-based research on technology usage in conjunction with PLC and administration.<br>• Implement and test term 2 (Français) technology plan.<br>• Develop term 3 (Français) technology plan. |
| Term 3 | • Implement and test term 3 (Français)<br>• Develop term 1 (Math) for upcoming academic year. |

| | |
|---|---|
| | • Identify necessary technology acquisitions, upgrades, or deletions for upcoming academic year.<br>• Secure funding for technology acquisitions and upgrades for upcoming academic year. |

**Evaluation**

Formative evaluation will take place on a modular basis for newly implemented plans, and on a summative basis for plans that are over one year old. The 2018-19 Technology Plan Goals, Objectives, & Instructional Strategies evaluation form from this plan will be used for instructional delivery assessment and adapted for student reporting purposes.

| **YEAR 1** | |
|---|---|
| Term 1 | 1. Distribute student home technology survey (Annex C). Adjust technology plan by augmenting or by reducing technology-related homework.<br>2. Attend Manitoba Association of Computing Educators SAGE conference (October 2018)<br>3. (Ongoing) Make observations on student technology usage, technical problems, or access issues.<br>4. Distribute and collect mid-term assessment surveys (adapted from Goals, Objectives, & Strategies form) from students.<br>5. (Every term) Distribute and collect end-of-term assessment surveys from students (adapted from Goals, Objectives, & Strategies form).<br>6. Review and adjust term 2 technology plan and adjust according to information gained from student surveys and classroom observations. |
| Term 2 | 1. Re-establish school-based technology PLC for sharing insights and procedures with colleagues.<br>2. Review and adjust term 3 technology plan and adjust according to information gained from student surveys and classroom observations. |
| Term 3 | 1. Hold round-table discussion with students to collect feedback on technology implementation.<br>2. Review and adjust technology plans for all modules and adjust plans according to collected data.<br>3. Determine necessary technology acquisitions, upgrades or deletions for upcoming academic year.<br>4. Secure funding for any technology acquisitions and upgrades for upcoming next academic year. |

| YEAR 2 | |
|---|---|
| Term 1 | 1. Distribute student home technology survey. Adjust technology plan by augmenting or by reducing technology-related assignments.<br>2. Attend Manitoba Association of Computing Educators SAGE conference (October 2018)<br>3. Review membership in school-based technology PLC, ensuring that stakeholder groups are adequately represented.<br>4. (Ongoing) Make observations on student technology usage, technical problems, or access issues for new modules.<br>5. (Every term) Distribute and collect end-of-term assessment surveys from students for new modules. |
| Term 2 | 1. Consider elaborating school-wide technology vision in conjunction with PLC and administration. |
| Term 3 | 1. Hold round-table discussion with students to collect feedback on technology implementation.<br>2. Review and adjust technology plans for all modules and adjust plans according to collected data.<br>3. Determine necessary technology acquisitions, upgrades or deletions for upcoming academic year.<br>4. Secure funding for any technology acquisitions and upgrades for upcoming academic year.<br>5. Identify external professional development opportunities for upcoming academic year. |
| **YEAR 3** | |
| Term 1 | 1. Install and test new technology acquisitions.<br>2. Distribute student home technology survey. Adjust technology plan by augmenting or by reducing technology-related homework.<br>3. Review membership in school-based technology PLC, ensuring that stakeholder groups are adequately represented.<br>4. Attend Manitoba Association of Computing Educators SAGE conference (October 2018)<br>5. (Ongoing) Make observations on student technology usage, technical problems, or access issues.<br>6. (Every term) Distribute and collect end-of-term assessment surveys from students. |
| Term 2 | 1. Consider initiating action-based research on technology usage in conjunction with PLC and administration. |
| Term 3 | 1. Determine necessary technology acquisitions, upgrades or deletions for the next academic year.<br>5. Secure funding for any technology acquisitions and upgrades for the |

| | |
|---|---|
| | next academic year.<br>6. Review and adjust technology plans for all modules and adjust plans according to collected data. |

## Conclusion

While students require technological skills in order to navigate modern society, the explicit instruction of such competencies should only form a small part of a classroom level technology plan. Digital technologies such as computers, software applications, Web-enabled devices and the Internet are potent tools that can, and should, be turned toward the loftier goals of enhancing knowledge acquisition, developing communities, and encouraging students to grow into lifelong learners. Properly applied, digital tools enable active participation in the learning process and push students to manipulate and structure knowledge on their own terms, boosting learning outcomes, an approach that aligns with constructivist learning principles (Vygotsky, 1978; McLeod, 2015).

This technology plan is a limited attempt at harnessing the power of technologies for enhanced content-based instruction and French language acquisition. If successful, further modules and subjects will be developed and implemented. The plan incorporates quantitative and qualitative data collection throughout the 3 year implementation process. This data could be used for research purposes. The potential for school-level Action-based research has also been built into the plan. Lessons learned from these experiences could potentially be developed into a shareable model for successful blended and/or hybrid second language education.

## References

Allen, M. W. (2007). Designing Successful e-Learning: Forget What You Know About Instructional Design and Do Something Interesting. San Francisco, CA: Pfeiffer.

de Cássia Veiga Marriott, R., & Lupion Torres, P. (2009). Preface. Handbook of Research on E-Learning Methodologies for Language Acquisition (pp. 1-646). Hershey, PA: IGI Global. doi:10.4018/978-1-59904-994-6

Éducation et formation professionelle Manitoba. (2000) Sciences de la nature, 4e année, Programme d'études - Document de mise en oeuvre. Retrieved from: http://www.edu.gov.mb.ca/m12/frpub/ped/sn/dmo_4e/docs/habitats.pdf

Franciosi, S. J. (2017). The Effect of Computer Game-Based Learning on FL Vocabulary Transferability. Educational Technology & Society, 20 (1), 123–133.

Hill, J., & Miller, K. (2013). *Classroom instruction that works with English language learners* (Second ed.). ASCD. ProQuest Ebook Central.

Hsueh, S. (2011). Challenges of Adopting Web 2.0 and Mobile 2.0 for Language Learning. In B. Facer, & M. Abdous (Eds.), Academic Podcasting and Mobile Assisted Language Learning: Applications and Outcomes (pp. 70-91). Hershey, PA: IGI Global. doi:10.4018/978-1-60960-141-6.ch005

Huot, D., Lemonnier, F. H., & Hamers, J. (2008). ICT and Language Learning at Secondary School. In F. Zhang, & B. Barber (Eds.), Handbook of Research on Computer-Enhanced Language Acquisition and Learning (pp. 84-100). Hershey, PA: IGI Global. doi:10.4018/978-1-59904-895-6.ch006

Kelly, M., Kennell, T., & McBride, R. (2007). Fast Forward: An Analysis of Online and

Distance Education Language Training. Ontario Council of Agencies Serving Immigrants. Canada. Citizenship and Immigration Canada. Ottawa, Ont. Retrieved from: http://www.deslibris.ca.qe2a-proxy.mun.ca/ID/215559

Krashen, S. D. & Terrell, T. (1983) *The Natural Approach: Language Acquisition in the Classroom*. Oxford: Pergamon. Retrieved from: http://www.osea-cite.org/class/SELT_materials/SELT_Reading_Krashen_.pdf

Li, B., Yao, S., & Hong, W. (2016). Beginning Chinese as a Foreign Language Online Course Design: Utilizing Multiple Digital Modes and Assessments. In C. Wang, & L. Winstead (Eds.), Handbook of Research on Foreign Language Education in the Digital Age (pp. 104-142). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0177-0.ch006

Manitoba Education and Training. (1999). Kindergarten to Grade 4 Science: Manitoba Curriculum Framework of Outcomes, Grade 4, Cluster 1: Habitats and Communities. Retrieved from: http://www.edu.gov.mb.ca/k12/cur/science/outcomes/k-4/grade4.pdf

McLeod, S. (2015). Jean Piaget [web page]. Retrieved from: https://www.simplypsychology.org/piaget.html

Prokhorets, E. K., Plekhanova, M. V. & Scherbinina, N. G. (2015). Instructional Design of Foreign Language Blended Courses. Procedia - Social and Behavioral Sciences, Vol.215, pp.161-169. doi: 10.1016/j.sbspro.2015.11.611

Purushotma, R., Thorne, S. L., & Wheatley, J. (2009) *10 Key Principles for Designing Video Games for Foreign Language Learning* [Internet]. Version 1. lingualgames.

Retrieved from: https://lingualgames.wordpress.com/article/10-key-principles-for-designing-video-27mkxqba7b13d-2/.

Salaberry, M. (2001). The Use of Technology for Second Language Learning and Teaching: A Retrospective. The Modern Language Journal, 85(1), 39-56. Retrieved from http://www.jstor.org/stable/330375

Stepp-Greany, J. (2003). Designing Instructional Technology for Language Learning. Academic Exchange Quarterly, Winter 2003: Volume 7, Issue 4. Retrieved from: http://rapidintellect.com/AEQweb/dec2595.htm

Thouësny, S., & Bradley, L. (2011). Introduction on views of emergent researchers in L2 teaching and learning with technology. In S. Thouësny & L. Bradley (Eds.), Second language teaching and learning with technology: views of emergent researchers (pp. 1-8). Dublin: Research-publishing.net. Retrieved from: https://files.eric.ed.gov/fulltext/ED574599.pdf

Vygotsky, L. (1978). Interaction Between Learning and Development. In Gauvain & Cole (Eds.) *Readings on the Development of Children*. New York: Scientific American Books. pp. 33-40

Ziegler, N. E., & Feucht, F. C. (2012). Technology and Second Language Learning: Developmental Recommendations for Early-Childhood Education. In S. Blake, D. Winsor, & L. Allen (Eds.), Technology and Young Children: Bridging the Communication-Generation Gap (pp. 151-179). Hershey, PA: IGI Global. doi:10.4018/978-1-61350-059-0.ch008

APPENDIX A – 2018-19 GRADE 4 SCIENCE: TERM 1 LESSON PLAN (30+ hours of instruction)

**2018-19 LESSON PLAN – GRADE 4 SCIENCE (TERM 1)**
**Theressa François – April 8, 2018**

**TECHNOLOGY ORIENTATION (1,5 hours)**

**Objective:**
Students will familiarise themselves with Blackboard LMS.

**Unit Objective:** Throughout this unit (C), students (A) successfully and independently (D) access, navigate, and post information to Blackboard LMS through a computer or another Web-enabled device (B).

**Justification for technology intervention:** Students require an orientation to the technological tools they will be using throughout the unit.

**Activities:**

- Log into divisional network with user name and password and navigate computer desktop to open Web browser.
- Log onto Blackboard LMS, navigate Blackboard to find unit glossary.
- Review ground rules for glossary contributions and netiquette.

**Technology/Resources:**

- Web-enabled computers, tablets or smart phones
- Digital overhead projector
- Blackboard LMS

**SUBJECT:** Science – Cluster 1: Habitats and Communities)

**Curricular Objective:**
4-1-01 Use appropriate vocabulary related to their investigations of habitats and communities …

**Unit Objective:** By the end of the unit (C), students (A) contribute two text, audio or video definitions to the final unit glossary on Blackboard LMS accompanied by an illustration (B) using grade-appropriate French vocabulary and structures to explain each concept (D).

**ARCC categories:** Absorb, Recall, Comprehend, Create.

**Justification for technology intervention:** An online repository eliminates the need for storage and transportation of a physical document. Students may also access, edit and add to their dictionaries from a variety of locations.

**Hardware requirements:**

- Computer / Web-compatible device.

- Functioning microphone.
- High-speed Internet connection.
- Digital camera.

**Software requirements:**

- Blackboard LMS

**Skills or training required:**

- Session login.
- Web navigation.
- Blackboard LMS navigation.
- Digital photography.
- Effective search engine use.
- Digital file storage and retrieval.
- Early keyboarding skills.

**Unit Objective:** Throughout the unit (C), students (A) access online videos and memory games created by the instructor for reviewing basic concepts and vocabulary (B), in order to correctly complete other unit activities (D).

**ARCC categories:** Absorb, Comprehend.

**Justification for technology intervention:** Allows students who missed lessons or who did not grasp the material the first time to review material at their own pace.

**Hardware requirements:**

- Computer / Web-compatible device.
- Instructor: Functioning webcam and microphone
- High-speed Internet connection.

**Software requirements:**

- Blackboard LMS
- Instructor: Match the Memory account (matchthememory.com/create)
- Instructor: Tinycards account (https://tinycards.duolingo.com/)

**Skills or training required:**

- Session login.
- Blackboard LMS navigation.

**Unit Objective:** By the end of this unit (C), students working in teams (A) will create and a vocabulary/concept quiz using Kahoot.com or the Kahoot app (B). Quizzes must feature 5 questions, they must use grade-appropriate French, and all questions and answers must be correct (D). Student quizzes will be reviewed in class.

**ARCC categories:** Recall, Comprehend, Create.

**Justification for technology intervention:** Creating learning and testing materials encourages students to review materials, to evaluate their own knowledge, and to apply that knowledge creatively.

**Hardware requirements:**

- Computer / Web-enabled device
- High-speed Internet connection

**Software requirements:**

- Kahoot.com account and installed app (optional)

**Skills or training required:**

- Kahoot.com session login and navigation

**Unit Objective:** By the end of the unit (C), students (A) will independently complete an online Blackboard LMS quiz (or paper equivalent) linking a selection of glossary terms to their correct definitions (B), achieving a score of at least 90% after 5 attempts (D).

**ARCC categories:** Comprehend.

**Justification for technology intervention:** Students receive immediate feedback for their selections. Students to learn from past mistakes through multiple attempts. Assessment is simplified for instructors.

**Hardware requirements:**

- Computer / Web-enabled device.
- High-speed Internet connection.

**Software requirements:**

- Blackboard LMS quiz function.

**Skills or training required:**

- Session login.
- Blackboard LMS navigation.

**Curricular Objectives:**

4-1-02 Recognize that each plant and animal depends on a specific habitat to meet its needs.

4-1-03 Identify the components of an animal habitat. Include: food, water, living space, cover/shelter.

**Module Objective:** Using an online tool (https://switchzoo.com/) (C), students (A) select a virtual biome or an animal habitat for a chosen animal (B) that correctly meets that animal's biological needs (D).

**ARCC categories:** None. Website only available in English. No francophone equivalent found.

**Justification for technology intervention:** The concepts of habitat and biome can be hard to explain effectively within a limited time period. This Website encourages students to explore a variety of biomes and habitats through simple but effective games that offer timely feedback.

**Hardware requirements:**

- Overhead digital projector.
- Computer or laptop.
- High-speed Internet connection.

**Software requirements:**

- Flash Player plug-in.

**Skills or training required:**

- Session login.
- Web navigation.

**Module Objective:** Using traditional or digital tools (C), students (A) create a poster of a Manitoban animal in its habitat (B), accurately depicting food and water sources, appropriate shelter, and space requirements it needs to survive (D). The poster must feature grade-appropriate French and correct unit vocabulary.

**ARCC categories:** Recall, Create

**Justification for technology intervention:** Poster creation encourages students to review materials, to evaluate their own knowledge, and to apply that knowledge creatively. Displaying student work for a public audience is also highly motivating.

**Hardware requirements:**

- Computer / Web-compatible device (or poster board)
- Printer (or art supplies)

**Software requirements:**

- Blackboard LMS
- Microsoft Publisher, Word or other desktop publishing software

**Skills or training required:**

- Session login.
- Web navigation.
- Effective search engine use.
- Early keyboarding skills.

**Curricular Objectives:**

4-1-04 Identify physical and behavioural adaptations of animals and plants, and infer how these adaptations help them to survive in a specific habitat.

4-1-06 Investigate how technological developments often mirror physical adaptations.

**Module Objective:** By the end of the module (C), students (A) contribute to an online class discussion by posting two labelled images: 1) a physical or behavioural adaptation found in an animal and; 2) a human technology that fulfils the same (or a similar) function (B). Labelling must feature grade-appropriate French and correct unit vocabulary (D).

**ARCC categories:** Recall, Comprehend.

**Justification for technology intervention:** Nearly all telephones now include a digital camera. This makes recording a scientific observation easy. Students wishing to research more exotic animals can easily access images through a Web search.

**Hardware requirements:**

- Digital camera.
- Computer / Web-enabled device.
- High-speed Internet connection.

**Software requirements:**

- Blackboard LMS

**Skills or training required:**

- Session login.
- Web navigation.
- LMS navigation.
- Digital photography.
- Effective search engine use.
- Digital file storage and retrieval.
- Early keyboarding skills.

**Curricular Objectives:**

4-1-05 Investigate alternate explanations of plant or animal adaptations based on traditional knowledge from a variety of cultures.

4-1-17 Recognize and appreciate how traditional knowledge contributes to our understanding of plant and animal populations and interactions.

**Module Objective:** By the end of the module (C), students (A) view short films or listen to stories describing Indigenous and First Peoples' interpretations of animal adaptations. Students then share their observations in class (B) using grade-appropriate French and correct unit vocabulary terms (D).

Professional short films: blogue.onf.ca/. YouTube playlist: youtube.com/ Online legends: lesautochtones.wikispaces.com/, museedubronze.com/, amerindien.e-monsite.com/

**ARCC categories:** Absorb.

**Justification for technology intervention:** Watching a video can assist in better comprehension for second language learners. Students may be inspired to animate a legend themselves.

**Hardware requirements:**

- Overhead projector.
- Computer (connected to projector).

- High-speed Internet connection.

**Software requirements:**

- None.

**Skills or training required:**

- No prerequisite skills.

**Curricular Objectives:**

4-1-07 Investigate and describe a variety of local and regional habitats and their associated populations of plants and animals.

4-1-08 Predict and test to determine an appropriate method for measuring a plant population within a given habitat.

**Module Objective:** Before the end of the module (C), students (A) observe wildlife through online Webcams. That knowledge is then used to correctly complete an observation form (B) using grade-appropriate French and correct unit vocabulary terms (D). Website examples: sandiegozoo.org/, houstonzoo.org/, and earthcam.com/

**ARCC categories:** Recall, Comprehend, Create.

**Justification for technology intervention:** Options for directly observing a variety of habitats can be limited without a trip to the local zoo. Webcams allow students to observe animals in a variety of habitats.

**Hardware requirements:**

- Overhead projector.
- Computer / Web-enabled device.
- High-speed Internet.
- Printer or photocopier.

**Software requirements:**

- Word processing software (for students choosing to create digital forms).

**Skills or training required:**

- Session login.
- Web navigation.
- Blackboard LMS navigation.
- Familiarity with word processing software.
- Digital file storage and retrieval.
- Early keyboarding skills.

**Curricular Objective:**

4-1-09 Recognize that plant and animal populations interact within a community.

4-1-13 Predict, based on their investigations, how the removal of a plant or animal population may affect the rest of the community.

**Module Objective:** Before the end of the module (C), students (A) explore the mechanisms driving natural selection through the PhET Natural Selection Simulation at https://phet.colorado.edu/fr/. Students manipulate the simulation's settings (B), then share their observations and conclusions in class using grade-appropriate French and correct unit vocabulary terms (D).

**ARCC:** Absorb, Comprehend.

**Justification for technology intervention:** Natural selection can be difficult to observe in real life without access to a laboratory. Through this simulator, students can trigger mutations in a population of virtual rabbits and manipulate aspects of the simulation's biome in order to observe and track resultant population changes.

**Hardware requirements:**

- Computer / Web-enabled device.
- High-speed Internet.

**Software requirements:**

- Java (computers, laptops).
- PhET Android / iOS app.

**Skills or training required:**

- Session login.
- Web navigation.

**Curricular Objective:**

4-1-11 Construct food chains and food webs, and classify organisms according to their roles. Include: producer, consumer, herbivore, omnivore, carnivore, predator, prey, scavenger.

4-1-10 Recognize that the food chain is a system in which some of the energy from the Sun is transferred eventually to animals.

**Module Objective:** By the end of the module, students (A) use the Popplet.com website or app (C) to create and share a food chain (B) that includes examples from each consumer category (D). Organisms must be accurately labelled using grade-appropriate French.

**ARCC:** Recall, Comprehend, Create.

**Justification for technology intervention:** The Popplet interface is intuitive and easy to use for young learners. Concept maps created in Popplet can be embedded within outside Web pages, allowing for easy sharing.

**Hardware requirements:**

- Computer / Web-enabled device.
- High-speed Internet connection.
- Digital camera (optional).

**Software requirements:**

- Popplet account (free).
- Flash Player plug-in (computers).
- Popplet Android / iOS app.

**Skills or training required:**

- Session login.
- Web navigation.
- Effective search engine use.
- Digital file storage and retrieval.
- Early keyboarding skills.

**Module Objective:** By the end of the module, students (A) use the Popplet.com website or app (C) to create and share a food web (B) depicting relationships between at least 10 organisms including at least one animal from each consumer category (D). Organisms must be accurately labelled using grade-appropriate French.

**ARCC:** Recall, Comprehend, Create.

**Justification for technology intervention:** The Popplet interface is intuitive and easy to use for young learners. Concept maps created in Popplet can be embedded within outside Web pages, allowing for easy sharing.

**Hardware requirements:**

- Computer / Web-enabled device.
- High-speed Internet connection.
- Digital camera (optional).

**Software requirements:**

- Popplet account (free).
- Flash Player plug-in (computers).
- Popplet Android / iOS app.

**Skills or training required:**

- Session login.
- Web navigation.
- Effective search engine use.
- Digital file storage and retrieval.
- Early keyboarding skills.

**Curricular Objective:**

4-1-12 Use the design process to construct a model of a local or regional habitat and its associated populations of plants and animals.

**Module Objective:** After accessing a Web page detailing instructions, assessment rubrics and examples of previous assignments, students (A) design and build a physical model of a Manitoba biome (B) depicting relationships between at least 10

organisms including at least one animal from each consumer category (D). Organisms must be accurately labelled using grade-appropriate French.

**Assessment:**

**ARCC:** Recall, Comprehend, Create

**Justification for technology intervention:** In the absence of physical examples, viewing images of others' projects can be inspiring and provide direction to students unsure of project objectives. Posting instructions and providing a rubric ensures that students are aware of desired outcomes.

**Hardware requirements:**

- Computer / Web-enabled device.
- High-speed Internet connection.

**Software requirements:**

- None.

**Skills or training required:**

- Session login.
- Web navigation.

**Curricular Objective:**

4-1-14 Investigate natural and human-caused changes to habitats, and identify resulting effects on plant and animal populations. Include: endangerment, extinction.

**Module Objective:** After consulting Google Earth to identify examples of human impacts on the environment, students (A) will contribute to a group Wiki or online discussion (B) by sharing an image of an environment in their community that has been altered as well as an image depicting that environment's natural state (C) before the end of the module (D). Students must write a post or record a video of themselves accurately describing the changes that occurred in their example using grade-appropriate French.

**ARCC:** Create

**Justification for technology intervention:** Students will rarely see environments that haven't been altered by human activity. The scope of the change can best be observed through satellite imagery. Digital cameras allow students to quickly record their observations.

**Infrastructure required:**

- Overhead projector**.**
- Computer / Web-enabled device.
- Webcam and microphone.
- Digital camera.
- High-speed Internet connection.

**Software requirements:**

- Blackboard LMS with audio and video recording functionality.
- Blackboard app (optional).
- Google Earth program or app.

**Skills or training required:**

- Session login.
- Web navigation.
- Blackboard LMS navigation.
- Digital photography.
- Effective search engine use.
- Digital file storage and retrieval.
- Early keyboarding skills.

**Curricular Objective:**

4-1-15 Describe how their actions can help conserve plant and animal populations and their habitats.

**Module Objective:** Before the end of the unit (C), students (A) contribute to a group Wiki or discussion by writing a post or recording a video of themselves or an avatar describing an example of environmental activism (B) using grade appropriate French that correctly incorporates unit vocabulary (D).

**ARCC:** Create

**Justification for technology intervention:** Wikis provide opportunities for classmates to share ideas and to learn from others' contributions. Participating in a group project encourages classroom discussion on a common topic and positive peer pressure motivates students to contribute.

**Hardware requirements:**

- Overhead projector**.**
- Computer / Web-enabled device.
- Webcam and microphone.
- Digital camera.
- High-speed Internet connection.

**Software requirements:**

- Blackboard LMS with audio and video recording functionality.
- Blackboard app (optional).
- Google Earth program or app (optional)
- Voki.com web account or app (optional)

**Skills or training required:**

- Session login.
- Web navigation.
- Blackboard LMS navigation.

- Voki.com navigation (optional)
- Digital photography.
- Effective search engine use.
- Digital file storage and retrieval.
- Early keyboarding skills.

APPENDIX B – ARCC FRAMEWORK OF SLA TECHNOLOGY SELECTION

**ARCC Framework:**

Research suggests that active-use technology interventions are excellent options for teachers looking to give their students a meaningful experience and much-needed practice in a target language (Allen, 2007; Franciosi, 2017; Purushotma et al., 2009; Stepp-Greany, 2003; Ziegler, & Feucht, 2012). Existing taxonomies have been created or adapted to guide ICT selection in the classroom (Ziegler, & Feucht, 2012; Toronto, 2010). These models do not deal explicitly with the needs of second language learners.

Following is a framework that can be adapted to help guide the selection of educators teaching any second or foreign-language students. It is inspired by, and builds upon, constructivist approaches to encourage higher-level thinking and learning wherever possible, while accepting that these higher levels are built upon the acquisition of lower-level skills. The framework has been refined to reflect accepted models of second language acquisition (Krashen & Terrell, 1983). The framework has not yet been validated through outside testing.

***(Fig. 1) ARCC: ABSORB, RECALL, COMPREHEND, CREATE***

| | | |
|---|---|---|
| **A** | **Absorb** – Students absorb new vocabulary through listening and viewing. | Examples: Videos, songs and audiobooks, non-educational video games featuring plenty of dialogue. |
| **R** | **Recall** – Students repeat new vocabulary and phrases, without necessarily fully understanding their structure or appropriate uses. | Examples: Matching drills, electronic flashcards, word searches, many language learning applications and programs. |
| **C** | **Comprehend** – Students understand input from the target language and can answer questions in that language independently. | Examples: Content-based tests, target language quizzes, puzzles with specific outcomes, simulations, language applications requiring phrase translation and sentence assembly. |
| **C** | **Create** – Students share ideas and explore concepts using the target language. | Examples: Writing emails, blogging, video and audio creation and editing, social media posts in the target language. |

The goals of the ARCC framework are threefold: 1) Assist educators in recognizing which technologies are best for developing basic vocabulary and comprehension skills; 2) Make educators conscious of the sequencing of technology interventions in order to prepare students for more creative tasks and; 3) Help educators recognize and prioritize technologies that are most likely to involve active use of a target language.

APPENDIX C: STUDENT HOME TECHNOLOGY ASSESSEMENT

Name: _____
Date: _____

Please answer the following questions regarding your Internet access and Web-enabled technologies. I will be using this information to plan my lessons and homework assignments. Your parents may help you fill out this form. All answers are confidential.

**What kind of Internet connection do you have at home?**

- ❑ DSL or Broadband cable (through Bell MTS or Shaw)
- ❑ Cellular (unlimited data: ❑ Yes ❑ No)
- ❑ Satellite
- ❑ Dial-Up
- ❑ I don't have an Internet connection at home

**What kind of computer or Web-enabled devices do you have at home?**

- ❑ Desktop computer
- ❑ Laptop
- ❑ Tablet (such as iPad)
- ❑ Smartphone
- ❑ iPod
- ❑ Other Apple or Android device: _____
- ❑ I don't have a computer or a Web-enabled device at home

**Can you access and use a Web-enabled device at home?**

- ❑ I can't use a computer or a Web-enabled device at home
- ❑ Limited access (1 – 2 hours per day)
- ❑ Medium access (3 – 4 hours per day)
- ❑ Unlimited access

**Do you have access to a printer at home?**

- ❑ Yes
- ❑ No

Thank you very much for your input!

Madame François
theressa.francois@lrsd.net

APPENDIX D – BLANK TECHNOLOGY IMPLEMENTATION READINESS ASSESSMENT FORM

| **Educational Technology Implementation Readiness Assessment<br>Based on 2017 ISTE Standards for Educators** | | | | |
|---|---|---|---|---|
| Completed by: | | Date: | | |
| **Instructions:**<br>As an individual, please rate your personal readiness for educational technology implementation using the following 3-point scale. If you find that you have conditions at Levels 1 or 2, use this tool to identify steps to move toward full implementation of professional learning.<br><br>Circle the most appropriate number:<br>3 - The condition is in place.<br>2 - Approaching condition implementation. See comments for improving implementation.<br>1 - The condition is not in place. See comments for initiating implementation. | | | | |
| **LEARNER**<br>Educators continually improve their practice by learning from and with others and exploring proven and promising practices that leverage technology to improve student learning. | | | | |
| **Indicators** | **3** | **2** | **1** | **Comments** |
| I have identified sources of information on technological modes of teaching.<br>a. I experiment with technological modes of teaching and reflect on their effectiveness. | | | | |
| I have identified colleagues and mentors who share an interest in technology integration in the classroom.<br>b. I engage with colleagues and mentors by creating or by participating in professional learning networks discussing technology integration in the classroom. | | | | |
| I stay up to date on research into pedagogical approaches and best practices.<br>c. I reflect on recent research and consider pedagogical approaches and technology interventions that would best meet my students' needs. | | | | |
| **LEADER**<br>Educators seek out opportunities for leadership to support student empowerment and success and to improve teaching and learning. | | | | |

| Indicators | | 3 | 2 | 1 | Comments |
|---|---|---|---|---|---|
| a. | I have identified stakeholders, including students, colleagues and administrators, interested in developing a shared vision of learning through the use of technologies.<br>I collaborate with stakeholders, including students, colleagues and administrators, to identify issues inhibiting technology integration in the classroom and to find solutions together. | | | | |
| b. | I consider my students' strengths and challenges when evaluating potential technologies for use in the classroom.<br>I ensure that students have equitable access to new technologies. | | | | |
| c. | I have developed a process for evaluating and for choosing technologies that best empower student learning.<br>I share knowledge gained from experimenting with new technologies with my colleagues, including successes and productive failures. | | | | |
| **CITIZEN**<br>Educators inspire students to positively contribute to and responsibly participate in the digital world. | | | | | |
| **Indicators** | | **3** | **2** | **1** | **Comments** |
| a. | I use technologies to strengthen relationships and to build safe communities for learners.<br>I encourage learners to contribute positively to online communities in a responsible manner. | | | | |
| b. | I teach students to critically appraise the credibility and the validity of resources they find online.<br>I encourage students to analyze sources of information and to recognize bias in their own thinking and that of others. | | | | |
| c. | I respect intellectual property rights by modeling the fair and legal use of online materials.<br>I ask students to identify the sources and the copyright status of materials found | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | online. | | | | |
| d. | I protect students' personal data and privacy while using online resources.<br>I demonstrate strategies for protecting personal data and privacy while using online resources. | | | | |
| **COLLABORATOR**<br>Educators dedicate time to collaborate with both colleagues and students to improve practice, discover and share resources and ideas, and solve problems. | | | | | |
| **Indicators** | | **3** | **2** | **1** | **Comments** |
| a. | I dedicate time for collaboration with colleagues on effective technologies and pedagogical strategies.<br>I work with colleagues to make technologies applicable and effective in a variety of student levels and learning contexts. | | | | |
| b. | I model continuous learning by creating opportunities to co-learn technologies with my students and to troubleshoot together.<br>I seek student feedback and I provide students with opportunities for peer teaching and collaborative learning. | | | | |
| c. | I have identified collaborative tools for engaging students in meaningful conversations around study topics.<br>I use technologies that connect students with outside content experts and communities locally and around the world. | | | | |
| d. | I recognize how culture and background affect perceptions of learning experiences.<br>I value and seek out feedback from students, families and colleagues from all cultures and backgrounds. | | | | |
| **DESIGNER**<br>Educators design authentic, learner-driven activities and environments that recognize and accommodate learner variability. | | | | | |
| **Indicators** | | **3** | **2** | **1** | **Comments** |
| a. | I use technologies to create, adapt and personalize learning experiences according to student interests. | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | I use technologies to foster student voice and to encourage student choice in my classroom. | | | | |
| b. | I critically evaluate technologies, choosing those that meet curricular outcomes and that deepen learning in content areas.<br>I encourage students to use digital tools actively for creating content rather than simply consuming it. | | | | |
| c. | I have identified blended or online learning approaches and technologies that could better support student learning in my classroom.<br>I am comfortable designing blended learning environments that optimize both face-to-face and online learning experiences. | | | | |
| **FACILITATOR**<br>Educators facilitate learning with technology to support student achievement of the 2016 ISTE Standards for Students. | | | | | |
| **Indicators** | | **3** | **2** | **1** | **Comments** |
| a. | I empower students to collaborate with educators and with peers to define learning outcomes and goals.<br>I have identified methods for creating positive group learning experiences for students. | | | | |
| b. | I understand the capabilities of different technologies for helping students achieve their goals.<br>I have identified a number of constructive digital learning tools as well as hands-on approaches (such as Makerspaces) for enhancing student learning. | | | | |
| c. | I understand computational thinking and design processes and I have identified tools for improving upon that knowledge.<br>I encourage students to use computational thinking and design processes to innovate and to solve meaningful problems for a variety of applications. | | | | |

| | | | | | |
|---|---|---|---|---|---|
| d. | I encourage students to use a variety of digital tools and approaches to express themselves creatively or to re-imagine their work.<br>I provide opportunities for students to publish their work for a larger audience and real-world impact. | | | | |
| **ANALYST**<br>Educators understand and use data to drive their instruction and support students in achieving their learning goals. | | | | | |
| **Indicators** | | **3** | **2** | **1** | **Comments** |
| a. | I provide students with choices in selecting how to demonstrate their competencies using technologies.<br>I reserve time and space for meaningful reflection by students on their performance and opportunities for experimentation and adjustment based on that reflection. | | | | |
| b. | I have identified and experimented with digital tools for streamlining the evaluation process and for meeting learner needs.<br>I provide students with a variety assessment modes, including summative, formative and ungraded evaluations, and I provide timely feedback. | | | | |
| c. | I analyze and synthesize data to provide a more accurate view of student progress.<br>I collect and share assessment data with students and their guardians, empowering learners to improve their learning progress. | | | | |

APPENDIX E – COMPLETED TECHNOLOGY IMPLEMENTATION READINESS ASSESSMENT FORM

| **Educational Technology Implementation Readiness Assessment<br>Based on 2017 ISTE Standards for Educators** | | | | |
|---|---|---|---|---|
| Completed by: *Theressa François* | | | Date: *March 11, 2018* | |
| **Instructions:**<br>As an individual, please rate your personal readiness for educational technology implementation using the following 3-point scale. If you find that you have conditions at Levels 1 or 2, use this tool to identify steps to move toward full implementation of professional learning.<br><br>Circle the most appropriate number:<br>3 - The condition is in place.<br>2 - Approaching condition implementation. See comments for improving implementation.<br>1 - The condition is not in place. See comments for initiating implementation. | | | | |
| **LEARNER**<br>Educators continually improve their practice by learning from and with others and exploring proven and promising practices that leverage technology to improve student learning. | | | | |
| **Indicators** | **3** | **2** | **1** | **Comments** |
| a. I have identified sources of information on technological modes of teaching. | ✔ | | | |
| a. I experiment with technological modes of teaching and reflect on their effectiveness. | ✔ | | | |
| b. I have identified colleagues and mentors who share an interest in technology integration in the classroom. | | ✔ | | *Our school's technology committee was disbanded by the principal, but could easily be re-formed as a PLC.* |
| b. I engage with colleagues and mentors by creating or by participating in professional learning networks discussing technology integration in the classroom. | | | ✔ | *I will have to spearhead a new ICT literacy PLC in my school.* |
| c. I stay up to date on research into pedagogical approaches and best practices. | ✔ | | | |
| c. I reflect on recent research and consider pedagogical approaches and technology interventions that would best meet my students' needs. | ✔ | | | |

| **LEADER**<br>Educators seek out opportunities for leadership to support student empowerment and success and to improve teaching and learning. | | | | |
|---|---|---|---|---|
| **Indicators** | **3** | **2** | **1** | **Comments** |
| a. I have identified stakeholders, including students, colleagues and administrators, interested in developing a shared vision of learning through the use of technologies. | | ✔ | | *I will need to reach out to students – they will likely have excellent suggestions for ICT tools!* |
| a. I collaborate with stakeholders, including students, colleagues and administrators, to identify issues inhibiting technology integration in the classroom and to find solutions together. | | | ✔ | *These issues will be the first order of business for my new ICT literacy PLC.* |
| b. I consider my students' strengths and challenges when evaluating potential technologies for use in the classroom. | ✔ | | | |
| b. I ensure that students have equitable access to new technologies. | ✔ | | | |
| c. I have developed a process for evaluating and for choosing technologies that best empower student learning. | ✔ | | | |
| c. I share knowledge gained from experimenting with new technologies with my colleagues, including successes and productive failures. | | | ✔ | *Sharing experiences with ICT will be an essential component of the new ICT literacy PLC.* |
| **CITIZEN**<br>Educators inspire students to positively contribute to and responsibly participate in the digital world. | | | | |
| **Indicators** | **3** | **2** | **1** | **Comments** |
| a. I use technologies to strengthen relationships and to build safe communities for learners. | | ✔ | | *I am developing an online component for classroom discussions.* |
| a. I encourage learners to contribute positively to online communities in a responsible manner. | | | ✔ | *I will address netiquette once my online classroom has been implemented.* |
| b. I teach students to critically appraise the credibility and the validity of resources they find online. | | ✔ | | *I've only touched on this during ELA classes.* |
| b. I encourage students to analyze sources of information and to recognize bias in their own thinking and that of others. | | ✔ | | *Again, I will need to address this explicitly in class.* |
| c. I respect intellectual property rights by modeling the fair and legal use of online | | ✔ | | *I follow these rules personally, but I haven't* |

| | | | | | |
|---|---|---|---|---|---|
| | materials. | | | | *explicitly explained the process to my students* |
| | I ask students to identify the sources and the copyright status of materials found online. | | | ✔ | *This will be an important element of my online course.* |
| | I protect students' personal data and privacy while using online resources. | ✔ | | | |
| d. | I demonstrate strategies for protecting personal data and privacy while using online resources. | | | ✔ | *This will be one of the first lessons during online orientation.* |
| **COLLABORATOR**<br>Educators dedicate time to collaborate with both colleagues and students to improve practice, discover and share resources and ideas, and solve problems. | | | | | |
| **Indicators** | | **3** | **2** | **1** | **Comments** |
| | I dedicate time for collaboration with colleagues on effective technologies and pedagogical strategies. | | | ✔ | *I will have to organize this as my administrator is hostile to ICT in general.* |
| a. | I work with colleagues to make technologies applicable and effective in a variety of student levels and learning contexts. | | | ✔ | *Again, an essential element of my new ICT literacy PLC.* |
| | I model continuous learning by creating opportunities to co-learn technologies with my students and to troubleshoot together. | | ✔ | | *I need to take risks and implement ICT even when I haven't fully mastered them.* |
| b. | I seek student feedback and I provide students with opportunities for peer teaching and collaborative learning. | | | ✔ | *I need to relinquish control in the classroom and let the students exercise their autonomy.* |
| | I have identified collaborative tools for engaging students in meaningful conversations around study topics. | | ✔ | | *I have begun experimenting with my province's LMS as well as online language discussion boards.* |
| c. | I use technologies that connect students with outside content experts and communities locally and around the world. | | | ✔ | *I need to reach out to other Francophone communities and experts to encourage meaningful interactions.* |
| | I recognize how culture and background affect perceptions of learning experiences. | ✔ | | | |
| d. | I value and seek out feedback from students, families and colleagues from all cultures and backgrounds. | ✔ | | | |

| **DESIGNER**<br>Educators design authentic, learner-driven activities and environments that recognize and accommodate learner variability. | | | | |
|---|---|---|---|---|
| **Indicators** | **3** | **2** | **1** | **Comments** |
| a. I use technologies to create, adapt and personalize learning experiences according to student interests. | ✔ | | | |
| a. I use technologies to foster student voice and to encourage student choice in my classroom. | | | ✔ | *I have to abandon my "chalk and talk" approach and adopt more constructive approaches.* |
| b. I critically evaluate technologies, choosing those that meet curricular outcomes and that deepen learning in content areas. | ✔ | | | |
| b. I encourage students to use digital tools actively for creating content rather than simply consuming it. | | ✔ | | *I'm very eager to use technologies for creative purposes and to enhance French-language use.* |
| c. I have identified blended or online learning approaches and technologies that could better support student learning in my classroom. | ✔ | | | |
| c. I am comfortable designing blended learning environments that optimize both face-to-face and online learning experiences. | ✔ | | | |

| **FACILITATOR**<br>Educators facilitate learning with technology to support student achievement of the 2016 ISTE Standards for Students. | | | | |
|---|---|---|---|---|
| **Indicators** | **3** | **2** | **1** | **Comments** |
| a. I empower students to collaborate with educators and with peers to define learning outcomes and goals. | | | ✔ | *I am constrained by curricular outcomes, but I do plan on engaging students in this sort of planning.* |
| a. I have identified methods for creating positive group learning experiences for students. | | ✔ | | *I plan on increasing my use of group learning and experimenting with methods.* |
| b. I understand the capabilities of different technologies for helping students achieve their goals. | ✔ | | | |

| | | | | | |
|---|---|---|---|---|---|
| | I have identified a number of constructive digital learning tools as well as hands-on approaches (such as Makerspaces) for enhancing student learning. | ✔ | | | |
| | I understand computational thinking and design processes and I have identified tools for improving upon that knowledge. | ✔ | | | |
| c. | I encourage students to use computational thinking and design processes to innovate and to solve meaningful problems for a variety of applications. | | | ✔ | *I need to develop student autonomy, initiate and problem-solving skills.* |
| d. | I encourage students to use a variety of digital tools and approaches to express themselves creatively or to re-imagine their work. | | ✔ | | *I've identified a number of tools for this purpose, but I have yet to test them.* |
| | I provide opportunities for students to publish their work for a larger audience and real-world impact. | | | ✔ | *I will need to create protected spaces online for safely sharing student work.* |
| **ANALYST**<br>Educators understand and use data to drive their instruction and support students in achieving their learning goals. | | | | | |
| **Indicators** | | **3** | **2** | **1** | **Comments** |
| | I provide students with choices in selecting how to demonstrate their competencies using technologies. | | | ✔ | *I plan on giving students maximum freedom in choosing how to meet goals.* |
| a. | I reserve time and space for meaningful reflection by students on their performance and opportunities for experimentation and adjustment based on that reflection. | | ✔ | | *I need to allocate more time for this.* |
| | I have identified and experimented with digital tools for streamlining the evaluation process and for meeting learner needs. | | ✔ | | *I need to test these methods next school year.* |
| b. | I provide students with a variety assessment modes, including summative, formative and ungraded evaluations, and I provide timely feedback. | | ✔ | | *I have only just begun to engage in formative and ungraded assessment. They are an important part of next year's plan.* |

| | | |
|---|---|---|
| | I analyze and synthesize data to provide a more accurate view of student progress. | ✔ |
| c. | I collect and share assessment data with students and their guardians, empowering learners to improve their learning progress. | ✔ |