

Teaching and Learning Enhancement Fund

Large TLEF Project – Final Report

Report Completion Date: (2017-12-18)

1. PROJECT OVERVIEW

1.1. General Information

Project Title:	Enhancing Teacher Candidates' Digital Competencies		
Principal Investigator:	Dr. Natasha Boškić, Senior Manager, Learning Design, ETS		
Report Submitted By:	Dr. Natasha Boškić		
Report Prepared By:	Yvonne Dawydiak, Cross-faculty Programs Instructional Specialist, FoE & Liza Navarro, PHD student, LLED		
Project Initiation Date:	May 2016	Project Completion Date:	December 2017

1.2. Project Summary

The purpose of this project was to create an integrated and sustainable way to support teacher candidates and faculty members in selecting, evaluating, and implementing digital media technologies in their practice. We put in place a mentoring system accompanied by pedagogical scaffolding that provided comprehensive online resources to teacher candidates.

With support from faculty and staff, the project successfully collaborated with instructors to redesign assignments and foster student engagement therefore providing opportunities for teacher candidates to “demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations” (ISTE Standards, 2008).

The focus was on digital media and tools that supported the following activities in:

- 1) LLED 361, Literacy Practices and Assessment, Secondary - immersive experiences across subject areas. (The initial proposal was to work with LLED 360, Classroom Discourses, but was replaced by LLED 361 at the start of the project)
- 2) EDCP 357, Secondary Physics Methods course – student classroom engagement and simulations, and
- 3) EPSE 317, Development and Exceptionality in the Regular Classroom – communication with students with exceptionalities 600 students in the Teacher Education program take at least one of these three courses.

1.3. Team Members – (Please fill in the following table and include students, undergraduate or graduate, who participated in your project).

Name	Title/Affiliation	Responsibilities/Roles
Natasha Boskic	Senior Manager, Educational Technology Support	Principal Applicant, Project Manager
Yvonne Dawydiak	Technology Integration Mentor,	Project Coordinator, Scarfe Digital Sandbox Author, Instructional

	Teacher Education Program	Specialist
Elizabeth Jordan/Kathleen Heikkila	Senior Instructor/12-month lecturer, Department of Educational and Counseling Psychology	Faculty partners - course coordinator EPSE 317
Kedrick James/Andreea Cervatiuk	Senior Instructor, Department of Language and Literacy	Faculty partners - course coordinator LLED 361
Marina Milner-Bolotin	Assistant Professor, Department of Curriculum and Pedagogy	Faculty Partner, course coordinator & instructor EDCP 357
Wendy Carr	Associate Dean, Teacher Education (TEO)	Oversight and consultation
Mark Edwards	Assistant Dean, Department of Professional Development and Community Engagement	Oversight and consultation
Jo-Anne Naslund	Instructional Programs Librarian, UBC Library	Education Librarian partner, resource specialist, facilitator
Wendy Traas	Reference Librarian, Education Library	Education Librarian partner, resource specialist, facilitator
Liza Navarro	Graduate Academic Assistant, UBC, Summer 2017 & W1 2017	resource & web development, facilitator, one on one support for students, GAA for LLED 360 & EPSE 317, Work Learn student for data analysis & project wrap up
Mary Kostandy	Graduate Academic Assistant, UBC, Summer 2017	resource & web development, facilitator, one on one support for students, GAA for LLED 360 & EPSE 317
Wendy Zhang	Co-op student, UBC, W2 2016 & Summer 2017	resource & web development, facilitator, one on one support for students
Kateryna Baranova	Co-op student, UBC, W1 2016	resource development, facilitator, one on one support for students
Gerald Tembrevilla	Graduate Academic Assistant, UBC, W1 2016	GAA specific to EDCP 357
Bruno Bachmann	Co-op student, UBC, Summer 2016	web programming, design & resource development
Melissa Liang	Co-op student, UBC, Summer 2016	web programming, design & resource development

1.4. Courses Reached – Please fill in the following table with ***past, current, and future*** courses and sections (e.g. HIST 101, 002, 2017/2018, Sep) that have been/will be reached by your project, including courses not included in your original proposal (you may adapt this section to the context of your project as necessary).

Course	Section	Academic Year	Term (Summer/Fall/Winter)
LLED	361	2017	Summer
EDCP	357	2016	W1

EPSE	317	2017	Summer
Also reached (in addition to originally proposed courses)			
LLED	360	2016	W1
LLED	350	2016	W1
LLED	353	2016, 2017	W1 and W2
EDUC	450	2016	W1 and W2
EDUC	440	2016	W1

2. OUTPUTS AND/OR PRODUCTS

2.1. Please **list** project outputs and/or products (e.g. resources, infrastructure, new courses/programs). Indicate the current location of such products and provide a URL if applicable.

Product(s)/Achievement(s):	Location:
Scarfe Digital Sandbox	http://scarfedigitalsandbox.teach.educ.ubc.ca
Workshops tailored to individual course objectives collaborative planning and teaching with instructors. Resources housed on Scarfe Digital Sandbox	http://scarfedigitalsandbox.teach.educ.ubc.ca/
Resources & new Assessment Projects specific to individual courses were created as part of the project and shared with faculty and students	
EDCP 357 Physics Methods Camtasia Video Project Assignment	http://scarfedigitalsandbox.teach.educ.ubc.ca/camtasia-edcp-assignment/
EPSE 317 Open Education Resource & Assistive Technologies Lesson Plan Revision Assignment	http://scarfedigitalsandbox.teach.educ.ubc.ca/assistive-technology-and-open-education-resources-take-flight-in-ubcs-bed-summer-program/ http://scarfedigitalsandbox.teach.educ.ubc.ca/assistive-technologies-in-the-classroom/
LLED 361 Immersive Experiences: Augmented and Virtual Reality in the classroom workshop	http://educ.ubc.ca/secondary-teacher-candidates-exploring-possibilities-for-augmented-and-virtual-reality-in-the-classroom/

2.2. **Item(s) Not Met** – Please list intended project outputs and/or products that were not attained and the reason(s) for this.

Item(s) Not Met:	Reason:
Specific Assessment Project for LLED 360	(logistics) We adjusted to provide resources and a multi-section in-class workshop related to course objectives rather than a specific assignment.

3. PROJECT IMPACT

3.1. What were you hoping to change or where were you hoping to see an impact with this project? – Please list the intended benefits of the project for students, TAs, instructors and/or community members.

Our expected outcome was and continues to be to build capacity among teacher candidates and faculty members in using technology for teaching and learning, build skills and competencies that will help them transfer knowledge to other situations and contexts and become part of wider network of professionals.

Specifically, the expected outcomes were:

1. Modified assignments and student engagements in LLED 361, EDCP 357 and EPSE 317 giving teacher candidates opportunities to critically examine technologies, evaluate their pedagogical potentials, and implement various digital tools in their courses, and during their practicum and teaching,
2. Creation of the support system that helped teacher candidates in achieving their goals,
3. Enabling teacher candidates to help each other with their inquiries and employment of digital competencies and educational technologies in their learning (as part of curricula and in meeting lifelong learning goals),
4. Inspiring and engaging students, and generating enthusiasm for communicating and creating with technology,
5. Making teacher candidates aware of their leadership roles and responsibilities in the field of education, recognizing they assume critical positions in the classroom, school, school district and university for implementing informed technology practices.

3.2. Were these changes/impacts achieved? How do you know they occurred? – To what extent were intended benefits achieved or not achieved? What evaluation strategies were used? How was data collected and analyzed? You are encouraged to include copies of data collection tools (e.g. surveys and interview protocols) as well as graphical representations of data and/or scenarios or quotes to represent and illustrate key themes.

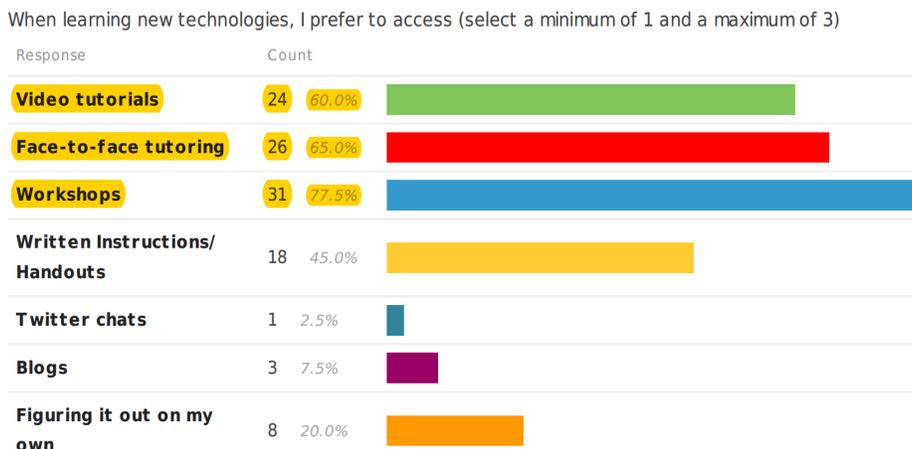
Thanks to strategic planning and the careful management, allocation and use of resources, we could extend the original scope and reach of this project. Included in the broad term ‘resources’, are the highly capable students we hired and our ability to leverage each of their particular strengths to positive effect. In addition, the higher profile of this project and its wide publicity among faculty and staff, including presentations at the Faculty Orientation sessions in August 2016 & 2017, as well as posts in the “This Week in Education” newsletter, led to engagements with courses beyond those originally proposed. Instructors impacted by the project also promoted and shared the resources created. For example, one instructor shared the Scarfe Digital Sandbox resources in her graduate courses (ETEC 565A and EDUC 490) and others shared them with their school district contacts.

Modified assignments were achieved in EDCP 357 and EPSE 317. We successfully coordinated with instructors to plan and implement new or revised course assignments to support course objectives. We found effective ways to integrate digital technologies into these assignments to foster digital competencies and innovative teaching approaches. We also achieved high engagement in LLED 360 despite it not being linked to a specific assignment due to the content focus that was highly emergent, exciting and tied to course objectives. We are hoping to build on this work in the following school year.

Integral to the project was the redesign and development of the Scarfe Digital Sandbox (<http://scarfedigitalsandbox.teach.educ.ubc.ca>), a blog and online repository of resources meant to support teaching and learning in today’s classrooms. In addition, co-planning with instructors, co-teaching, in class workshops and just-in-time support provided by our Technology Integration Mentor, graduate academic assistants and co-op students helped increase awareness of and the development of digital competencies. The Scarfe Digital Sandbox has grown since its initial release in September 2013 and now, thanks in large part to this project, has a large selection of well-organized, curated online resources available for teacher candidates and instructors. The resources can be sorted by subject area, grade levels and resource type. In addition, each resource has a brief overview of what it is, its relevance and how to use it. On the Scarfe Digital Sandbox there is also a blog that provides users with reflections of previous workshops as well as updates on the latest tools available in education. These resources were used as digital handouts to follow in class seminars. Students have also now begun to share examples of their own lesson plans and digital technology integration as resources on the Scarfe Digital Sandbox. We hope to build this aspect over the next few years. The website also highlights upcoming events and provides opportunities for users to register and learn more about digital technology integration and resources.

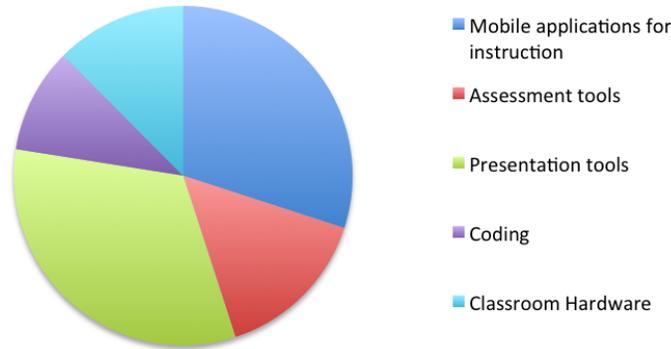
In addition to the Scarfe Digital Sandbox, our team members made themselves available to teacher candidates in need of additional support. We conducted many workshops as well as drop-in information sessions, which received positive reviews. Through this open space, teacher candidates had the opportunity to explore new technologies, work together and foster new relationships with their peers. In addition, they had the chance to voice their opinions and share their experiences and teaching practices with others. During these workshops, our team encouraged questions, discussions and stressed the importance of developing digital competencies as a part of their professional development and role as instructors who model digital citizenship. We received frequent informal feedback from teacher candidates engaged in workshops, classes, tutorials showed that they recognized growth in their digital competencies and pedagogical approaches. Formal feedback forms were collected for most every workshop session. Overall, feedback was very positive and critical feedback helped us to improve delivery in subsequent sessions.

Teacher candidates completed an onboarding survey in August 2016 in which they self-assessed their digital competencies and set goals for their learning during their BEd year. Results from the survey drove the project in that resources were allocated to suit the modes, mediums and topics expressed as preferences by the respondents.



The survey asked about student perception of their competencies with respect to integrating specific digital technologies. Students expressed that they needed to develop their understanding of assessment, media creation and coding. This informed on-line resource development, workshop and course session topics.

Teacher candidate interest



Prior to completing their BEd program, an exit survey was released in summer 2017 (Digital Competencies for Teachers Exit Survey). In this survey, teacher candidates had the opportunity to reflect and share their impressions of how this project impacted their digital competencies. Results were positive and showed that students felt more prepared to select, evaluate and integrate technology into their teaching practices. Specifically, areas noted as ‘needs’ in the pre-boarding survey (assessment and media creation) were seen as areas of growth in the exit survey. It was clear from the results that those who attended workshops and information sessions found it to be helpful in their teaching practices. In addition, teacher candidates expressed great regard for the Scarfe Digital Sandbox resources and expressed gratitude for the opportunities provided by this project:

"In practicum, I found that the key to better student engagement was varying methods of assessment. Additionally, I learned that full integration and modelling use of educational technologies is important. It cannot be incorporated halfheartedly." (Teacher Candidate in exit survey)

"I feel that I'm much more comfortable and more knowledgeable regarding many different media platforms (e.g. Plickers, padlet, google apps, etc.)." (Teacher Candidate in exit survey)

"I loved all the digital tech workshops!! I only wish we had more!" (Teacher Candidate in exit survey)

"I really appreciated this aspect of the teacher education program. I only wish that it was more integrated into the program as, say, a three-week class like in the summer terms, as opposed to only having guest lectures." (Teacher Candidate in exit survey)

3.3. Dissemination – Please provide a list of **past** and **upcoming** scholarly activities (e.g. publications, presentations, invited talks, etc.) in which you or anyone from your team have shared information regarding this project.

As part of the TLEF, we collaborated with instructors and various units and departments in the Faculty of Education (FoE) to promote the integration of digital technologies in teaching and learning. These included co-teaching in class, Scarfe Sandbox Sessions in the Education Library and one on one and small group consultations. Our team developed resources for each collaboration and/or workshop session and shared these on the Scarfe Digital Sandbox blog. In addition, we regularly shared highlights and resources more

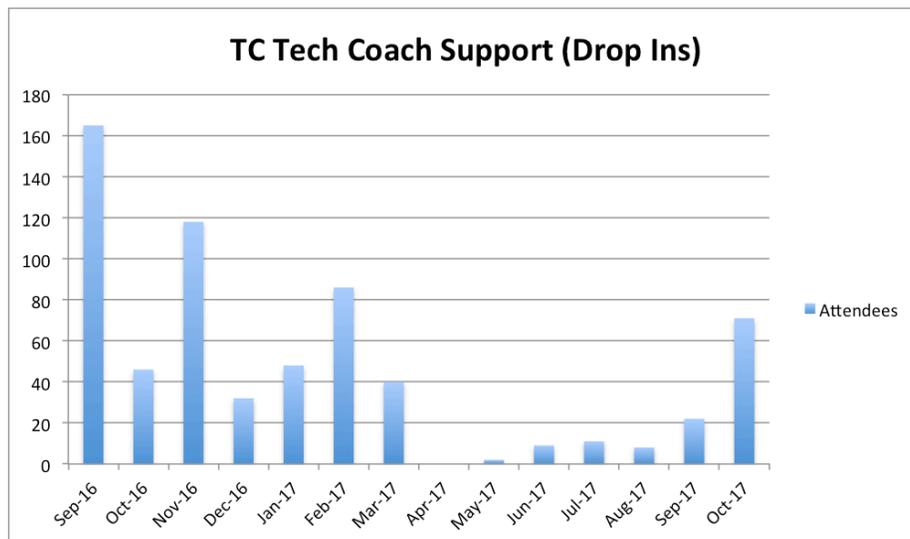
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widely with the overall FoE community (instructors, staff, students, alumni) on “This Week in Education”, an FoE newsletter. These reflections, reports and event listing were also tweeted and shared via other social media channels. In addition, Liza Navarro, one of our GAAs, recently published an article in BC TEAL (*Teachers of English as an Additional Language*) magazine sharing her experiences with technology and language teacher candidates during her time with this TLEF.

<https://www.bcteal.org/wp-content/uploads/2017/11/TEAL-News-Fall-2017.pdf>

Our Technology Integration Mentor attended faculty and departmental meetings and discussed advances and upcoming events through the TLEF. In addition, she participated in a poster session which highlighted the project, its goals and accomplishments.

On Tuesdays and Thursdays over the lunch break, co-op students highlighted different resources for BEd students in the Scarfe foyer. Tuesdays were geared towards Elementary teacher candidates and Thursdays to Secondary teacher candidates. Topics included creating multimedia presentations, augmented and virtual reality, exploring cloud-based applications, using “hooks” to engage students, Student Response Systems, visual coding with Scratch, Fidget and Stress-Ball making and Plugged and Unplugged making.



Attendance varied depending on the time of term. Teacher candidates attending were often ‘repeat’ attendees who were highly engaged in working to integrate digital technology in their practice. Informal feedback was positive. This face time with teacher candidates allowed the co-op students to foster relationships with them. Teacher candidates felt comfortable discussing technological issues and pedagogical questions with co-op and graduate students. It is important to note that total reach in Fall 2016 was based upon having a full-time co-op student funded by this project who was available to teacher candidates daily and via email. In the Fall of 2017, we have had a 10 hour per week Work Learn student who, while she was working on wrapping up the project, analyzing survey data and completing the final report, was still able to make herself available for an hour, twice a week in the foyer. The latter is likely what we will have support for in the future but we hope, with the addition of trained peer ‘TC Tech Coaches’, we will be able to increase the reach.

In addition to these informal one-on-one sessions, Yvonne Dawydiak, the Technology Integration Mentor, held sixteen Scarfe Sandbox sessions on eight unique topics during W1 and W2 2016. Total reach of the sessions was one hundred eighty-four. In addition, more than fifty students sought one-on-one help to integrate digital technologies into their practicum lesson and unit plans when Yvonne hosted “Gearing up for Practicum” sessions in W2 2016. In addition, Yvonne represented and disseminated project efforts within the education community including TEC EXPO 2016/17, the TLEF poster session in May 2017, Celebrate Learning 2017, the Provincial Specialist Association Super Conference 2017, West Cast 2017 and

at the WKTP Teacher Education Program. Through her efforts at these face-to-face opportunities and via social media channels, this project and the Scarfe Digital Sandbox Blog has been seen and is gaining recognition in various educational contexts.

4. **TEACHING PRACTICES** – Please indicate if **your** teaching practices or those of **others** have changed as a result of your project. If so, in what ways? Do you see these changes as sustainable over time? Why or why not?

Reflections of Yvonne Dawydiak, Technology Integration Mentor, Project Coordinator:

It has been a pleasure and a privilege to work closely with all of the stakeholders in this project. From Natasha Boskic and ETS, to Course Coordinators in three departments, to the student team working with me ‘on the ground’ and to the teacher candidates, instructors and staff in the Teacher Education Program in the Faculty of Education at UBC, all participants in the project have expressed the value of the work we did. Writing this final report with Liza Navarro, GAA, has given me an opportunity to reflect on the impact of the work we have done in the past year. I believe this project has had a tremendous impact.

The past year was a unique one for me. It was the first year I did not have my own cohort of students as a seconded faculty but, instead, I was charged with trying to work with students and faculty across the program as a Technology Integration Mentor, a 50% one-year Management and Professional appointment. I was concerned that I would not feel the same sense of professional satisfaction and connection with students as I had as an instructor and faculty advisor but found, instead, that without the need to focus so much of my energy on one small group of students, I was able to forge meaningful relationships with students from across the program. This was evident in the frequency with which TCs (teacher candidates) reached out to me with questions, to share accomplishments and challenges while on practicum and even after they graduated. At the recent Faculty of Education Awards night, I was able to touch base with over twenty graduates with whom I had worked. All had positive things to say about their experiences learning with our project team and the importance of this work on their success as students and their practice as teachers. From one alumni at the event:

"The work I did with you is even more relevant now that I'm teaching full-time in Vancouver. We will be purchasing some iPads and computers and the Principal asked me to be a part of the team making this plan. I feel you helped prepare me to do this and I'd really like to stay in touch."

As a K-12 classroom teacher for 25 years and as a mentor at UBC for the past five, I have had the pleasure of working with a wide range of individuals and teaching in so many different contexts and found this experience to be unique and one of my most memorable. As always, I learned a great deal from the students with whom I worked. In this project, what was unique for me was that the students -- GAAs and co-op -- were also my project partners. This afforded me opportunities to improve my own teaching and mentoring skills as I helped them work to their particular strengths and discover and address areas that would benefit from development. I was, overall, impressed by their collective willingness to learn, their work ethic and growth mindsets.

As to sustainability: I am pleased that the results of, and feedback based on, this project have helped to raise the profile of, and catalyze support for, the work I have tried to do over the past several years with our teacher candidates and faculty in the BEd Program. I recognize that, given the expectations of transformed teaching in the revised BC curriculum, our teacher candidates and faculty have an increasing need for resources to help them develop their digital competencies and their awareness of this need is heightened like never before. I am honoured to be able to continue this work but acknowledge that it is still only a part (40%) of a newly developed role in the faculty I will hold beginning January 2018, that of



Cross-faculty Programs Instructional Specialist. The challenge for me, moving forward, will be to build on this momentum to continue to find ways to build capacity across the faculty without increasing the number of actual hours I am able to give. Given the large body of resources created for this project, the redesigned and improved Scarfe Digital Sandbox, the ongoing support of the leadership in the faculty and potential future grants and project opportunities, I feel confident we can continue to move forward with helping teacher candidates build their digital competencies.

Reflections of Bachelor of Education students, teacher candidates (TCs):

During the course of this project, our team worked with many teacher candidates fostering relationships, encouraging critical thinking and imparting knowledge. Below is a video made by our GAAs showing the reflections and feedback from three teacher candidates. This video was also shown to new and returning UBC faculty at the welcome back orientation in September 2017.

<https://www.youtube.com/watch?v=I-FIdRSn4SQ>

Reflections of Marina Milner-Bolotin, Assistant Professor, EDCP 357:

In the beginning of this project, we worked with Dr. Milner-Bolotin in her Physics Method's course to find ways to integrate technology. Attached is a video describing her experience and reflections on this project.

<https://www.youtube.com/watch?v=b8tNIGpZh4I>

Reflections of Christine Bridge, Sessional Instructor, LLED 361:

During this project, we had the opportunity to work with various instructors in LLED including Christine Bridge. She enjoyed our sessions so much that she repeatedly sought Yvonne's guidance and support and felt that our engagement with the teacher candidates was so important that she would invite us again to her LLED classes for the following reasons:

- To help teacher candidates' gain awareness of an array of technologies that might be implemented into their future practice;
- To provide them with the opportunity to 'test-drive' new tools;
- To highlight effective practice modelled in a comfortable setting, to brainstorm possibilities in a variety of subject areas, and to ask questions;
- To engage in meaningful discussions about issues such as copyright, privacy, permissions, moderation, etc. that otherwise might not occur;
- To facilitate pedagogical discussions surrounding the use of technology in educational settings.
(Christine Bridge, testimonial)

Christine truly benefited from our involvement and believes we have positively influenced her teaching practice: "I try to infuse technology into my own practice and very much value and appreciate how open Yvonne has been in being able to connect, bounce around ideas, and walk through new tools -- not to mention all the support she offers students outside of class time" (Christine Bride, testimonial). In addition, she informed us that the feedback she received from her teacher candidates was always very positive, and she only wished her students had a longer amount of time to interact and engage with technology.

Reflections of Wendy Traas, Reference Librarian, Education Library UBC:

One important session we conducted during this project concerned Open Educational Resources (OER). For this topic, we held various workshops and collaborated with Jo-Anne Naslund and Wendy Traas, librarians in the Education library. Together we exposed teacher candidates to new technologies and resources available online and within the library promoting practical teaching practices and discussing ethical



obligations as digital citizens. Reflecting back on her experience with this partnership and TLEF project, Wendy Traas found that she had grown as an educator and attained new pedagogical skills:

As a teaching librarian, these sessions have given me valuable opportunities to explore emerging conversations and tools around digital literacy and links to pedagogy. As a result of this project, I am more aware of tools such as makerspace kits, student response systems, open education repositories, and virtual and augmented reality. The project has inspired me to incorporate many of these into my branch to support student learning. (Wendy Traas, testimonial)

In addition, Wendy found that our project provided students with a means to develop their digital literacy and pedagogical approaches:

Digital literacy is an important topic for new teachers, requiring them to consider their own practices in addition to modelling them in the classroom with students. Given the rapid change of digital technologies, this project is a timely opportunity for students to learn new skills and develop critical thinking skills about the many pedagogical applications. By working within specific courses, the project allowed students to explore tools and strategies in an authentic and meaningful way. (Wendy Traas, testimonial)

Reflections of Liza Navarro, GAA:

During Summer 2017 and Fall 2017, Liza Navarro has worked as a GAA for the TLEF project. In her role, she worked alongside team members to find relevant and engaging resources for teacher candidates. In addition, she conducted seminars with teacher candidates. Liza expressed gratitude for this opportunity and believes that this experience has enhanced her learning:

Thanks to this experience, I know that when I finish my doctoral degree in education, my goal is to find a teaching tenure track so that I can continue to work alongside teacher candidates. Finding ways to integrate technology in the classroom is now essential in this high-tech environment and I strongly feel that teacher candidates need more exposure and opportunities to learn about and put these resources into practice. I have enjoyed working on this project and have learned a great deal about technology, online resources, the BEd teacher program and BC curriculum. With the skills I have acquired and things I have learned, I have taken initiative in spreading my knowledge by means of a publication. In addition, I have submitted a proposal to a conference that looks at technology in a French language learning context. I only hope that UBC continues to support what was created and foster digital competencies among their teacher candidates in years to come! (Liza Navarro, testimonial)

BC TEAL Magazine:

<https://www.bcteal.org/wp-content/uploads/2017/11/TEAL-News-Fall-2017.pdf>

Reflections of Mary Kostandy, GAA:

During Summer 2017, Mary Kostandy worked as a GAA with the TLEF project. In her role, she and Liza worked together to find resources and conduct seminars with teacher candidates. Mary looks back on this experience with great joy and asserts that she found a lot of meaning working on this project. She not only "rediscovered a passion for teaching and supporting teacher candidates in using technology" but her participation expanded her knowledge and skill sets of digital technologies. Upon returning to Egypt, Mary intends on sharing her experiences and knowledge with instructors. In addition, she only hopes that there will continue to be sustained avenues for helping teacher candidates to develop their digital competencies.

<https://www.youtube.com/watch?v=buYWGfyO6io>

Winter 1 2016 Interim Project Report

Following the first semester of the project, co-op students Katya Baranova and Gerald Tembrevilla worked with Yvonne Dawydiak to develop an interim project report in which they presented project progress, findings, work done with BEd students and instructors and their own reflections on the project. We shared this report with project partners and the wider Faculty of Education Community. This report provided summary information for the interactive poster (with augmented reality elements) we shared at the Spring 2017 TLEF Showcase.

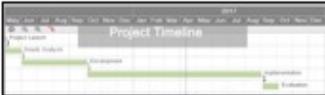
Faculty of Education

Enhancing Teacher Candidates' Digital Competencies

Duration: May 2016 – August 2017
Project Manager: Natasha Boskic, Senior Manager Learning Design, ETS; Project Coordinator: Yvonne Dawydiak, Tech Integration Mentor, Teacher Education

Overview

Enhancing Teacher Candidates' Digital Competencies is a TLEF funded project that started in May 2016 and will complete in August 2017.



The purpose of the project is to develop an integrated and sustainable way to support teacher candidates (TCs) and faculty members in selecting, evaluating and implementing digital technologies in practice.

To achieve this, we are working with instructors in the BEd program to embed digital technologies in course assignments in meaningful ways and providing just-in-time support to teacher candidates.

Outcomes

Outcomes of this project to date include:

- Scarfe Digital Sandbox: the support system that helps teacher candidates with a combination of online resources and face-to-face drop-in sessions. Content is based on survey and focus group feedback.
- Modified assignments and student engagements in EDCP 357, helping TCs build their digital competencies and making them aware of their potential roles and responsibilities in the field of education with respect to digital technology integration.
- Preparing TCs to integrate digital technologies into their teaching during practicum through one on one and small group planning/resource sessions.

Scarfe Digital Sandbox

The Scarfe Digital Sandbox began in 2013 as a virtual and face-to-face space for members of the teacher education community to explore digital technology integration. "Sandbox Sessions" are held in collaboration with the Education Library as drop-in workshops where students can get personalized help integrating technologies into their courses and practicum planning.

As part of the TLEF project, the website went through a complete overhaul including a redesign and the addition of resources, videos and student developed content.

i. Online Resources



The web space enables TCs and instructors to:

- Easily filter varied resources to support selection appropriate to context.
- Use and re-purpose resources for their own context.
- Share knowledge by adding resources and providing feedback on existing resources.



ii. Sandbox Sessions

1. Gearing up for Practicum sessions:

Teacher candidates consult with education librarians and our tech integration mentor to help them integrate multi-modal resources including digital technologies into their practicum plans.



2. Drop-in sessions

The coop student introduces technologies and helps teacher candidates find their own ways to incorporate them in their specific contexts.



3. Workshop sessions

These sessions included optional labs where teacher candidates were able to explore digital tools and participate in design challenges.



Embedding Digital Technologies into Course Assignments

We recognize the importance of teachers in today's classrooms being able to critically examine technologies, evaluate their pedagogical potential, and implement them in their practice in authentic ways. To enable this, we worked with the coordinators and instructors in three BEd courses:

i. EDCP 357 – Physics Methods

From Sept-Dec 2016, the project team worked with this single section course. An in-class assignment, where students created video tutorials to explain physics concepts, was well received by students and the instructor, who plans to incorporate a similar assignment into a multi-section course next year.



ii. Upcoming : LLED 361, EPSE 317

From May – Aug 2017, we will work with faculty and students in two multi-section courses, LLED 361 Literacy Practices and Assessment and EPSE 317 Development and Exceptionality in the Regular Classroom to help meet course objectives while enabling students to further develop their digital competencies.

We gratefully acknowledge the financial support provided by UBC Vancouver students via the Teaching and Learning Enhancement Fund. Coop students and GAAs we hired to develop this project and help meet the needs of our students and faculty.

- Branno Buchanan, Melissa Liang, (May – Sept 2016)
- Kataryna Bannawa, (Sept – Dec 2016)
- Gerald Tembrevilla (Sept – Dec 2016)
- Wendy Zhang, (Jan – Aug 2017)

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Partners

Dr. Wendy Carr,
Jo-Anne Nishand,
Dr. Mark Edwards

EDCP 357
Dr. Marisa Miller-Belotin

LLED 361
Dr. Koderick James
Dr. Andrea Webb

EPSE 317
Dr. Elizabeth Jordan
Dr. Mary Leah DeBraet

Additional reflections from students involved as staff in the project can be found on the ETS website: <http://ets.educ.ubc.ca/about/student-testimonial/>

5. PROJECT SUSTAINMENT – Please describe the sustainment strategy for the project components. How will this be sustained and potentially expanded (e.g. over the next five years). What challenges do you foresee for achieving the expected long-term impacts listed above?

Prior to the project being funded, Yvonne Dawydiak, Adjunct Teaching Professor and Technology Integration Specialist, had developed the Scarfe Digital Sandbox as a UBC blog but recognized the need to improve the overall design and increase the variety of resources available on the blog. One of the goals of this project was to improve teacher candidates' digital competencies and increase awareness of online resources and tools that can facilitate

learning and improve pedagogical practices. This was done successfully through workshops, resources developed and shared on The Scarfe Digital Sandbox Blog, collaboration with instructors and the support of our team. Google analytics data shows that Scarfe Digital Sandbox was accessed by over thirty-five hundred unique visitors in more than seventy-five hundred sessions between July 2016 and August 2017 (fig. 1) and that the site has had almost twenty-three thousand page views (fig. 2). Considering there were approximately three hundred fifty secondary teacher candidates last year (six hundred teacher candidates in the whole program), this is evidence of a much larger reach than we had hoped. We can also infer from the fact that the data shows that most visitors also return, that they are finding value in the resources.



fig. 1

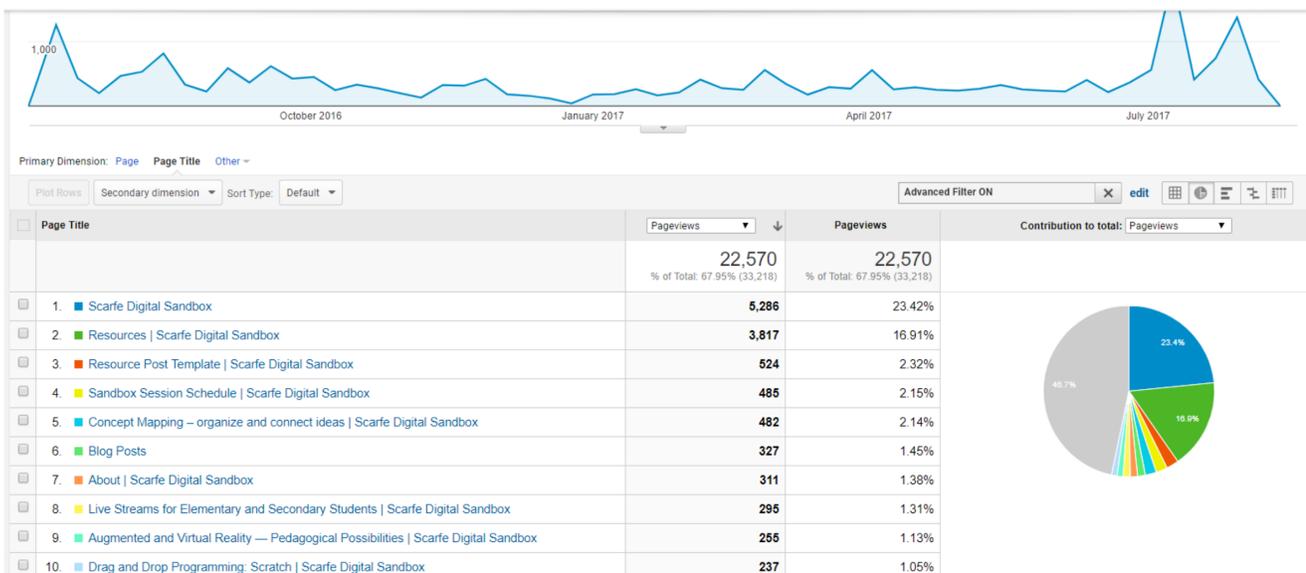


fig. 2

Results also show that most audiences find the website through direct search or referral from another website. The most frequently used pages are the homepage and the resource page which has received excellent reviews from



teacher candidates. Now, the blog is not only a go to place for current teacher candidates and instructors in the Teacher Education Program but also for former teacher candidates and teachers practicing in the field.

"I will continue to rely on the digital sandbox blog and website to keep up to date on tech resources which can be used in a classroom." (Teacher Candidate in project exit survey August 2017)

Leadership in the Teacher Education Program in the Faculty of Education recognizes the value of the completed and ongoing work of this project and has indicated that there is value in supporting teacher candidates and instructors in integrating digital technologies into their teaching practices. The position of Technology Integration Mentor has now been formalized due in part to the success of this project. The Cross-faculty Programs Instructional Specialist role, a continuing M&P staff position within the Teacher Education Program, includes mentoring as part of the position. With this position in place, instructors, teacher candidates and practicing teachers will continue to have access to an up to date digital resource via the Scarfe Digital Sandbox as well as a face-to-face point of contact in the Faculty to support their pedagogical practices. The Teacher Education Office is also looking into the feasibility of a budget line item to hire a Work Learn student on an annual basis. In addition, student volunteers will be encouraged to become peer mentors and be available on a regular schedule each Fall term.

This project and its team have had a positive trickle-down effect on the Faculty by raising awareness of the need to help teacher candidates develop their digital competencies and also by directly supporting the work of faculty and staff who have come together to create additional projects and grants in this area including:

- Making a big difference with very little: Creating a community resource for hands-on math and science activities on a "shoestring budget", TLEF, Dr. Milner-Bolotin, EDCP. The video footage created for Dr. Milner-Bolotin's project became the raw material for the assignment resources created by our TLEF project team in consultation with Dr. Milner-Bolotin. The digital tutorial resources we provided and the videos that students created with our help in the Fall of 2016 provided exemplars and resources for future projects and, ultimately, the development of a fully integrated assignment across Secondary Science Methods courses.
- Sky Water Earth, Sharon Hu, ETS. Dr. Milner-Bolotin created a playlist for this project based on the work done in our TLEF project.
- Enhancing Teaching and Learning in the 21st Century Literacy Classroom: Preparing Faculty and Teacher Candidates for Mobile Technologies, TLEF, Marianne McTavish, LLED. Resources, Professional Development and in-class workshops were developed by our TLEF project team to support this project in Winter 2016.
- Augmented Reality in the Education Library, Wendy Traas. Our team developed AR resources for library orientation sessions, researched and compared existing AR applications and, ultimately, consulted on the resulting small TLEF project conducted by the library in Summer 2017.
- Building Digital Citizenship and Critical Digital Literacies in French Program Teacher Candidates through Open Educational Repositories, proposed small TLEF grant submitted Winter 2017, Yvonne Dawydiak, Liza Navarro and others propose developing Open Educational Resources (OER) specifically for the French BEd cohorts in order to provide opportunities to enhance French teacher candidates' digital citizenship and competencies. While developing and researching OER for BEd students in our current project, Liza Navarro, our French-speaking GAA, found there was a lack of resources available to successfully support French teacher candidates and teachers.