



# CASE STUDY

Designing and implementing a self-study guide for reflection and skill development in support of a Co-operative Education Research Certificate

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PEBBLEPAD CASE STUDIES

**STORIES OF INNOVATION TOLD BY THOSE CHARTING NEW COURSES IN LEARNING, TEACHING AND ASSESSMENT.**

## THE CONTEXT

Co-operative Education (Co-op) at the University of Waterloo is centrally coordinated, supporting Co-op degree programs in six faculties (Applied Health Sciences, Arts, Engineering, Environment, Mathematics and Science). To receive a Co-op degree at Waterloo, students are required to complete:

- a minimum of four work terms,
- work term reports/reflections, and
- online professional development courses.

In 2016, the Co-op department established a team to “refresh” its model of experiential education. One outcome of these efforts was the University’s approval of Co-op Certificates; a new academic credential to recognize students who demonstrate an area of specialization in their Co-op work term experiences.

The Co-operative Education Research Certificate (CERC) was the first Co-op Certificate approved (effective September 2018) and could be awarded to students who:

- Received credit for at least three work-term experiences focused on research;
- Received credit for a professional development course related to research in the workplace;
- Completed a capstone interview in which they must demonstrate their attainment of specific research experiences; and
- Met all other requirements of their desired Co-op degree.

CERC requirements reflect a specific focus on research during a student's attainment of their Co-op degree. The capstone is not required of Co-op students who do not pursue the certificate. Students wishing to pursue the CERC independently complete the requirements and request to be assessed for the designation at the time of graduation.

## THE PROBLEM

Co-op Certificates were to recognize the degree of specialization that some students were already achieving as they pursued Co-op degrees. As such, the certificates would not include formal instruction, rather students would need to demonstrate they had met all certificate requirements, assessed against a clear and robust set of criteria (to ensure that the certificates represented a meaningful academic credential). Certificates were envisioned as an enhancement to the students' degrees and available at no additional cost. As such, limited resources were available to support formal instruction and assessment for the certificates.

The CERC utilizes the Research Skill Development (RSD 7) Framework developed by the University of Adelaide as the basis for assessment (Willison & O'Regan, 2015). During the capstone, students must assess their research against this framework and demonstrate, with evidence, why their experience merits special recognition. There were no plans for formal instruction on the framework or how to utilize the framework to prepare for the Capstone Interview.

Prior to signing up for the capstone, students would already have completed all other requirements of the certificate. As a result, the Co-op department focused its efforts on identifying cost and resource effective ways to support students preparing for the CERC Capstone Interview.

## THE APPROACH

Given the nature of the CERC, any resources developed would need to support independent study. Students generally complete their Co-op degrees over five years and could complete CERC requirements at any time within that period. As such, any resources would need to be available throughout the students' entire program of study. In addition, as the Capstone Interview was the only requirement unique to the CERC, the focus was on developing resources to help students prepare for the capstone.

A committee was formed to finalize the capstone requirements (e.g., instructions, rubrics, format, etc.) and develop the resources students would need to understand how to meet each requirement. Given the resource limitations, the department reached out to institutional partners (Waterloo's Centre for Career Action, Centre for Teaching Excellence, Library, Office of Research, Professional Development Program, and Writing and Communication Centre) for assistance. Through this collaboration all instructional supports for the CERC were developed, either tied to existing services our partners were offering or in the form of dedicated documentation to guide and support students preparing for the capstone.

After the initial offering of the capstone, it was felt that there was something missing. After consultation with our partners, it was determined that there was need for a resource that would:

- Allow students to engage with the RSD 7 framework before, during, and after their individual research experiences;
- Aid the students in better connecting their research experience to the RSD7 framework and identifying any areas for development; and
- Ensure that all students had the opportunity to receive some personal guidance/feedback prior to engaging in the Capstone Interview.

It was further decided that a PebblePad resource would best meet our needs, for a variety of reasons:

- PebblePad could be linked through the on-line community (facilitated by our web-based course management system) used to house the dedicated CERC documentation, which was already accessible to students throughout their degree. The PebblePad resource would complement the resources developed to date.
- PebblePad assets could be easily shared by the students with campus partners when taking advantage of coaching opportunities. Having students control access to their PebblePad assets addressed privacy concerns associated with trying to implement similar approaches in the on-line community.
- The ability to share PebblePad assets with external parties (e.g., to support job applications, admissions in graduate studies, etc.) could be incredibly valuable for students engaged in work-integrated learning experiences.

In Fall 2019 a PebblePad workbook was successfully launched. This resource was divided into four distinct sections (tabs):

- A **"How to use this workbook"** section, which provided information on how to use the PebblePad Workbook.
- A **"Research experience"** section designed to support students' reflection on their individual research experiences (not just their Co-op research work terms) and their degree of alignment with the capstone requirements. This tab contained several duplicate worksheets so students could maintain a record of each individual research experience.
- The **"RSD7 action plan and record"** section provided a central location for students to track both the skills they were developing and the context in which the skills were being developed, with

specific reference to the RSD7. This section had a dedicated worksheet for each of the six facets of the RSD7 framework and focussed on both collecting evidence to demonstrate each facet and identifying any gaps in their experience.

- The **“Application to participate in the capstone”** section was structured like a “job application” form in which “applicants” answer questions to demonstrate their “qualifications” prior to being awarded an interview. Applications were to be submitted at least a month before the Capstone Interview was scheduled, to provide an opportunity for students to receive feedback prior to the capstone. This section replaced a sign-up form in the on-line community, which already required staff time to review and approve. Transitioning the application process into PebblePad provided an avenue for feedback and coaching, with an incremental increase to existing resource use requirements.

To respect student privacy, students were advised that their workbook entries would neither be reviewed nor assessed unless they submitted the “application to participate in the capstone” (e.g., no auto submissions to ATLAS). Students were advised that by submitting the application, the entire workbook would be shared for review, though only the application would be formally assessed.

## THE RESULTS

As this was the first year of offering, only a small number of students met the Capstone Interview eligibility requirements each term. Consequently, the number of applications for Fall 2019 was less than 5 students. While it is difficult to draw definitive conclusions with such a small sample, those administering and assessing the capstone felt the implementation of the PebblePad resource was quite successful.

The new format of the “application to participate in the capstone” allowed for identification of students who appeared to have misunderstandings of the RSD7 framework and who could benefit from additional coaching. Our institutional partners reported that more participants had taken advantage of campus resources after reviewing the feedback. Assessors also noted that the interviewee’s responses were better aligned with the RSD7 framework, which helped with the assessment.

It was also found that the “application to participate in the capstone” could be easily shared with the assessors prior to the interviews. The assessors had more background on the “candidates” prior to the interview, which enabled richer feedback for the participants.

Unfortunately, none of the applicants made effective use of “research experience” and “RSD7 action plan and record” workbook tabs. This was not surprising since these students did not have access to the PebblePad resource during their research experiences. Completing the tabs after the fact would have required a lot of effort in the two-week period they had to complete and submit the application.



## LESSONS LEARNT

Engaging in this work reinforced how influential even a small degree of reflection and feedback can be in supporting student success. Implementing these changes required (minimal) additional effort but had huge impact on the students' ability to relate their experiences to the assessment framework.

The implementation of the PebblePad workbook highlighted that personal online learning environments can not only support student reflection and learning, but also simplify program administration. Transforming an administrative registration form into a "job application" format still met the administrative need, but also facilitated an effective medium for coaching and feedback.

While we will need more time and users to assess the "research experience" and "RSD7 action plan and record" sections of the workbook, the process of addressing this problem highlighted the immense benefit of developing assets that are accessible and sharable with employers after a student's completion of their formal studies. Such access is a huge benefit within the context of the CERC and work-integrated learning more broadly. This process also highlighted a few issues that we hope to address in the near future. These include:

- As we made the conscious decision not to use the "auto-submit" function, we could not know how many students were making use of these resources and/or how many individuals would be impacted if we made changes to a resource. We need to identify ways of tracking resource usage and the creation of assets, while continuing to reassure students we cannot see their "unsubmitted" reflections. This data will be critical when justifying the allocation of resources needed to maintain the PebblePad workbook.
- With PebblePad being relatively new at Waterloo, we are not confident that we have implemented the resource in the most effective way. We have already engaged in consultations with PebblePad to identify areas for improvement and have some changes in the works for January 2020. For example, we will be:
  - » using Collections and multi-use templates in the "research experience" tab. This will allow assessors to see if users have created any assets, rather than the current practice of having to click on each sheet individually to see if any information is recorded. This also allows us to maintain a single "research experience" resource, rather than multiple resources (e.g., one resource per experience).
  - » using assessment fields within the "application to participate in the capstone" section to streamline the provision of feedback.

## IN BRIEF

Overall, our key take-home messages are as follows:

- Facilitating even a small amount of reflection and coaching on research work terms can have significant impact.
- When developing resources, consideration of the audience is key. Designing resources that create assets for review by an instructor to support assessment of program or course learning outcomes might differ substantially from those designed for review by an employer.
- Implementation of reflective practices to support student learning can be resource intensive. However, thinking beyond implementation of such practices in instructional applications, and including consideration of administrative activities, may identify unconventional applications that do not tax existing resources.
- Balancing the desire to foster personal, private reflective practice with the need to monitor how resources are being used is important. Having a clear sense of the key rationale for the resource is critical to identifying the right balance for the specific application – and often involves compromise.

## REFERENCES

Willison, J. and O'Regan, K. (2015). The Researcher Skill Development Framework. Accessed from <https://www.adelaide.edu.au/melt/the-models-of-melt#research-skill-development>



# AN EXPERT TEAM

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## GET IN TOUCH

There are an awful lot of things that make PebblePad unique. Not least the fact that it's a platform designed by educators for educators. Indeed, the PebblePad team is bursting to the seams with innovators and practitioners, all of whom learnt their craft in teaching roles. If you want to talk to a team who really understands your world, get in touch.

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