#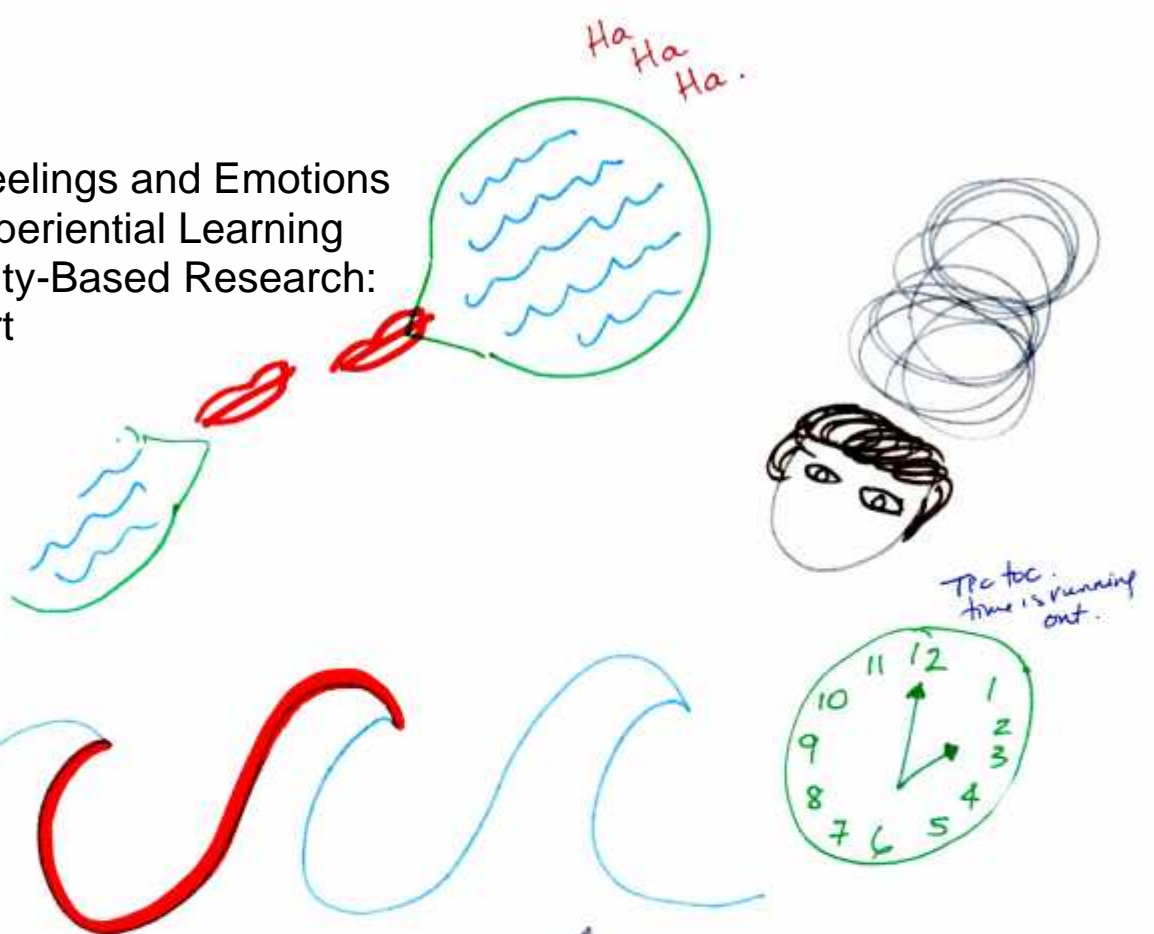 Reflecting on Feelings and Emotions in Graduate, Experiential Learning About Community-Based Research: Technical Report
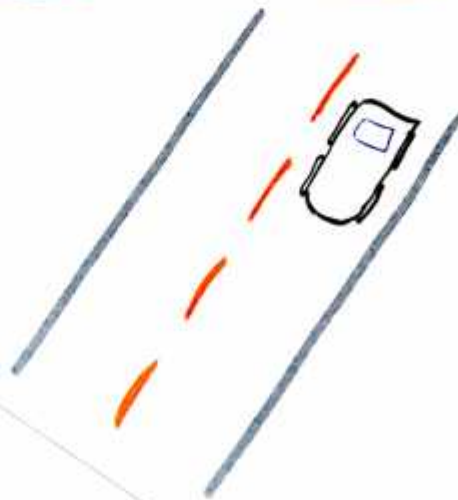
Ha Ha Ha.

Tic toc. time is running out.

By

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"I started with the wave and that was how I described that one experience with the student. I put red because it can be really frustrating, but the essence I think is there are really big highs and then there are really big lows, and sometimes you feel like you are crashing and drowning at times. Related to some projects where you want to say, *Can we shut this thing down now*?

So related to just CBR students generally, I spend a lot of time on the road, and I think that is a critical piece of the mentorship. So sometimes communities are three hours there and back, so six hours in the car. You are trapped and you talk a lot, and you really get to know each other and you can debrief the process. As well as I really got to know lots of my staff and students that I travelled with, so that has been a really positive thing.

The clock is...we leave really early in the morning sometimes on these road trips, but also that time is a factor and sometimes that could be 3 in the morning I am up thinking about this stuff. Or it could be tick-tock, time is running out- we need to spend our grant money, and we haven't accomplished what we were meant to, and we spent a year and a half building relationships, and/or the student is kind of like, *Oh my god, we are in July here- what the heck have I been doing, building relationship*s? So kind of like, time is a factor and time I think has a lot of connotations- it could be the time you invest in students, but also time always seems to be running out, and you turn around, and it's gone kind of thing. But also relaxing around time and, *Oh wow, it is August, and we didn't accomplish what we set out to accomplish,* and that's okay, too.

And this is my attempt at two people talking- we do a lot of talking and we actually do a fair bit of laughing… . So that's kind of the essence of- and again it's that high and low; we do spend a lot of time together. We talk a lot because it is so process-oriented. But then there are times when- that's me blowing steam. Well maybe it should have been coming out of my ears but sometimes it's also the essence of that mentorship can also be really like frustrating or confusing too like, *Ugh, what are we doing here together*? So those are some of my attempts at- Now if I could dance it – that would be worse actually."

-Tanya, Mentors' focus group

Cover page – **Figure 1:** Essence of mentoring graduate-level experiential learning about community-based research (CBR) (Tanya, Mentor).

EXECUTIVE SUMMARY

In community-based research (CBR), relationships are a medium of experience. Even though CBR practitioners are expected to relate well in the midst of partnership activities, navigating potentially intense feelings and emotions when much may be at stake (e.g., critical issues, funding, time) is a skill unto itself. To learn about CBR, immersion in collaborative relationships creates experiential learning opportunities. How do graduate students navigate these relationships as learning tools, particularly the feelings and emotions that arise?

Through this project, we set out to learn about reflecting on feelings and emotions that arise among graduate students and university mentors in the context of first-hand experiences in CBR. The contextual point of reference is the Science Shop and its initial five years of programming from 2009 to 2013. The Science Shop is offered by the Women and Children's Health Research Institute (WCHRI) at the University of Alberta (UofA) in partnership with the Community-University Partnership for the Study of Children, Youth, and Families (CUP).

We worked with a qualitative design, particularly a focused-ethnographic approach with students and their university-based mentors regarding their experiences in the Science Shop. The program's Research Coordinator and Academic Lead were resources for the study. We invited participants to reflect on past experiential learning about CBR, particularly feelings and emotions, through critical dialogue in student-mentor pairs, a group of students, and a group of mentors. We adopted an interpretive-description approach to inform the development and implementation of curricula; the practice of CBR; and scholarship about engagement.

CBR relationships may be conceptualized as learning tools. As students, mentors, and staff in the Science Shop related in this project, learning through "layers of mentorship" and relationships in CBR can be an intense experience, likened to a rollercoaster, waves, waterfall, and free-fall. A great deal of "emotional energy" may be required, and potentially gained through collaboration. An openness to developing "soft skills" (e.g., empathy) is helpful. Finding a "fit" is necessary between student interests and needs, mentor interests and needs, mutually beneficial CBR activities relative to community interests and needs, and time (i.e., more than the four months currently supported by the program). Creating time and space to express and reflect on feelings and emotions as an individual and/or with others involved in the CBR experience is critical for making the learning experience transformative.

One of the potential outcomes of CBR is individual and/or social transformation – that individuals and groups not only are able to effect change of some sort but are also changed as a result of collaboration. With enhanced understanding through this project, we offer insights into designing and implementing experiential learning about CBR, a type of critical engagement. By extending the timeline (beyond the existing four-month structure) of the Science Shop, the additional time would be a resource for:
   (i)   *supporting the development of "fit" between students', mentors', and community partners' interests and needs;*
   (ii) *collaborative responses to critical community issues; and*

(iii) *supporting student reflection on feelings and emotions that arise in experiential learning about CBR.* Development of reflective (or "propositional") skills amid the experience is worthy of curriculum support.

When "fit" occurs and reflection is practised, the Science Shop supports optimal, transformative experiential learning about CBR. The outcomes can be tremendous: graduate students attuned not only to product but also to process, through first-hand knowledge of relational skills.

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CONTENTS

INTRODUCTION

This project is about studying critical reflection and critical dialogue among graduate students and university mentors regarding experiential learning about community-based research (CBR).[1] CBR is an approach to research adopted by people who seek to respond to a common concern (Wallerstein & Duran, 2008). Broadly, CBR is a type of critical engagement with an intent: "to share … knowledge and learn with those who struggle for social justice, and to collaborate … respectfully and responsibly for the purpose of improving life" (Fear, Rosaen, Bawden, & Foster-Fishman, 2006, pp. xiii, 257-258). CBR partnerships are diverse, relative to such dimensions as education, socio-economic status, gender, (dis)ability, religion, race, ethnicity, and sexual orientation. Partners navigate power dynamics as they seek to co-create knowledge in response to common issues. CBR is relational by virtue of collaboration, knowledge sharing, and co-learning.

When CBR partnerships strive for equitable participation among partners throughout the life of a project, CBR may be characterized by individual and social transformation (Guishard, 2009). How might graduate experiential learning about CBR be transformative to engage "whole persons" (i.e., physical, emotional, intuitive, relational, Taylor, 2008, p. 11; Dirkx, 2008; Fear et al., 2006)? Critical reflection is a necessary part of such learning (Yorks & Kasl, 2006); however, reflective learning is an acquired skill (Taylor, 2008). In recent decades, constructivists noted that conventional higher education was characterized by "teaching at" (Heron, 1992, p. 59) students toward providing them with "bricks" for a wall of cognitive knowledge (Moon, 2004, p. 16). Yet, when learning is conceptualized as a "vast but flexible network of ideas and feelings" (Moon, 2004, p. 16), learners develop responsibility for that flexibility. They can do that through reflection about their experiences regarding not only how theory matches or is disconnected from practice but also the emotional insights that arise in such contexts (Moon, 2004). In some Western societal contexts, articulating emotional insights has been discouraged in education (Dirkx, 2008) and may be difficult (e.g., lacking vocabulary, Moon, 2004) in an "emotionally repressive" culture (Heron, 1992, p. 131). Facilitating the development of "emotional competence" continues to be an "educational issue" (Heron, 1992, pp. 131, 133), a shared responsibility among learners (not only graduate students but also faculty) to support self-directed learning *particularly* for justice-oriented education (Conklin, 2008). The need for critical reflection is also felt in the larger community of practice of CBR (Wallerstein & Duran, 2010), particularly in terms of feelings and emotions that arise amid power imbalances between marginalized and dominant voices (Guishard, 2009).

Since 2009, in response to community-driven research questions, graduate students and university-based supervisors have co-developed CBR partnerships through the Science Shop. The program is offered by the Women and Children's Health Research Institute (WCHRI) at the University of Alberta (UofA) in partnership with the Community-University Partnership for the Study of Children, Youth, and Families (CUP). Based on a model developed in the 1970s in the Netherlands, the international science-shop movement supports mutually beneficial

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[1] For the purpose of this report which is focused on a training program named, CBR Summer Studentship, we will primarily use the acronym, CBR; however, in a few instances, participants refer to community-based research and/or evaluation (CBRE).

relationships to democratize access to research resources and to co-create knowledge that can be applied in society (Jørgensen, 2005). The Science Shop was established to support CBR in women and children's health and to meet community organizations', service providers', government, and/or academic needs. Through a low-cost, participatory model, community-based organizations enhance their research capacity, knowledge, and practice as students learn experientially.

PURPOSE OF THE PROJECT

The project has three objectives:
1) To study critical reflection and critical dialogue among student-mentor pairs regarding affect in past CBR mentoring interactions.
    a. To study affect (i.e., feelings and emotions; Heron, 1992) that has arisen during experiential learning in the WCHRI/CUP Science-Shop program.
    b. To serve as a vehicle for students and mentors to reflect about affect, in support of transformative learning.
2) To study how experiences with the Science Shop inform student and mentor understanding about research and its potential to effect change and/or justice.
3) To mobilize the findings to support graduate-student capacity building regarding affect in not only the *practice* of CBR but also the *study* of CBR (e.g., in the development and implementation of curricula; in the practice of CBR; and in scholarship about engagement).

Two research questions framed the data collection and analysis:
1) What feelings and emotions arise among graduate students and university mentors in the context of first-hand experiences in CBR?
2) How is retrospective critical dialogue about those feelings and emotions part of transformative learning (about CBR; as a result of CBR) for students and mentors relative to CBR partnerships, university contexts, and CBR communities of practice?

PURPOSE OF THIS PRELIMINARY TECHNICAL REPORT

In this report, we present preliminary results of the project as a step toward further interpretation. The report contains some descriptive context, a few key categories, and several themes. Preliminary interpretation and recommendations are offered. Additional knowledge mobilization is anticipated in the future, particularly to apply the findings in the development and implementation of curricula about critical engagement, in the practice of community-based research and evaluation (CBRE), and in the growing scholarship about engagement.

BACKGROUND

Community-based research (CBR) is a collaborative approach to knowledge exchange, creation, and mobilization, based on an assumption that multiple experts exist and together can respond to critical issues to create change in the world (e.g., social, environmental, and economic justice). CBR is characterized by process, respect, trust, equitability, mutual benefit, consensus-based decision-making, and support for diverse voices (Cargo & Mercer, 2008). Coping with ambiguity amid the life of a partnership can be emotionally draining (Smith & Bryan, 2005). Frustration and conflict may arise (Gray et al., 2012). Partners, who are marginalized in society,

may feel further threatened. Anxiety and resistance may be at play, as partners ask each other to let go of some interests and risk unfamiliar activities.

However, an aspect of collaborative research that is rarely discussed is a feeling and emotional or affective dimension. Western society has tended to suppress emotions (Heron, 1992), particularly in professional settings, and Western constructions of research have been characterized by objectivity and discouragement of feelings and emotions. However, CBR is relational work and human beings live in terms of feelings and emotions. If we wish to establish and maintain CBR relationships to effect justice, we need to bring our whole selves to the work.

Through this project, we set out to learn about feelings and emotions that arise among graduate students and university mentors in the context of first-hand experiences in CBR. The programmatic point of reference for us is the Science Shop and its initial five years of operation from 2009 to 2013. Our interview and focus-group questions asked participants to reflect on past experiential learning about CBR, particularly about feelings and emotions through critical dialogue in student-mentor pairs, a group of students, and a group of mentors.

CONCEPTUAL FRAMEWORK

In our working framework for the project, we make sense of the findings in terms of five conceptual lenses: (i) a human-ecological lens; (ii) transformative learning; (iii) affective mode of being; (iv) experiential learning; and (v) reflective learning.

With a human-ecological lens, we approach the study assuming that people are interdependent with each other and physical, societal, temporal, and other environments or contexts. Factors exist within and across these contexts and facilitate and hinder how people live and make sense of their lives (Sontag & Bubolz, 1988).

We learn through "a process with many events influencing and modifying each other simultaneously" (Moon, 2004, p. 11). If something happens that is different from what we expect, we begin to consider taken-for-granted assumptions and multiple perspectives (Yorks & Kasl, 2006, p. 60). If our beliefs (frames of reference; habits of mind; points of view) change in terms of an openness and if we act on that shift in understanding (Cranton & Roy, 2003, p. 88), the learning is transformative. Transformation is characterized by "dialogue, discourse, or relationships with others" (Cranton & Roy, 2003, p. 90). That dialogue may also be introspectively reflective, with one's own unconscious (p. 91).

Learning about collaborative, process-oriented CBR may be challenging not only in conceptual terms (e.g., how to define CBR) but also regarding role. CBR is characterized by collaboration by many types of experts to respond to complex issues. Yet, for those trained in western academic, expert-based scholarship, CBR may challenge a sense of identity as sole or primary expert in an area of knowledge. In other words, CBR requires relationships between the people and the contexts that wish to collaborate. Such a challenge to a sense of self may be a challenge to the basis of personhood: affect (Heron, 1992).

We learn through not only ideas but also feelings (Moon, 2004, p. 16). In Heron's (1992) theory of the person, he describes an "up-hierarchy" with four modes of the psyche: affective,

imaginal, conceptual, and practical. Heron conceptualizes the affective mode as the foundation of these modes. Affective dimensions, like roots, give rise to the other modes like a trunk, branches, and fruit (p. 20). Affect is characterized by participative and individuating dimensions. On the one hand, feelings are an expression of how an individual relates to other people. On the other hand, emotions are an expression of an individual's needs and how they are met. Heron (1992) conceptualizes feelings as resonance with social, natural, and temporal contexts. Feelings are an inter-personal dynamic, between individuals as they interact with each other. If a person were to say, "That resonates with me," s/he would be remarking on a feeling. For example, empathy is a feeling. Emotions are an intra-personal dynamic, within an individual as s/he responds to an event/idea/action; whatever happens might meet her/his expectation, needs, or interests and/or may not (Heron, 1992). In response, an emotion arises, for example, joy.

Designing ways to help "…learners understand and make sense of these emotion-laden experiences within the context of the curriculum represents one of the most important and most challenging tasks for adult educators" (Dirkx, 2008, p. 9). In addition to the four modes of the psyche (i.e., affective, imaginal, conceptual, and practical), Heron's (1992) personhood lens is helpful for thinking in terms of creating opportunities for learners to work with four ways of knowing: experiential, presentational, propositional, and practical. Through the Science Shop, students have an opportunity to experience CBR (i.e., in an affective mode). What opportunities exist for the students to express what they have experienced? Presentational knowing (Heron, 1992) or expressive ways of knowing (Yorks & Kasl, 2006) support learners' awareness of their emotions (i.e., in an imaginal mode). How are they encouraged to propose or make sense of their experiences (i.e., in a conceptual mode)? Then, how do they act with those insights (i.e., in a practical mode)? And, how are students changed by that learning experience?

Reflective learning can be a helpful tool for students as they make sense of their hands-on experiences. However, developing reflective (or "propositional") skills amid the experience is a skill unto itself and a form of learning. In this study, we adopt the following definition of transformative learning: "a wholistic [*sic*] change in how a person both affectively experiences and conceptually frames his or her experience of the world when pursuing learning that is personally developmental, socially controversial, or requires personal or social healing" (Yorks & Kasl, 2006, pp. 45-46). One of the objectives of CBR is individual and social transformation – that individuals and groups are able to effect change of some sort and that they will be changed as a result of collaboration. Through the Science Shop, students potentially will experience change or grow in various ways including with an enhanced understanding about CBR. This project is as much about asking Science-Shop participants (i.e., students and mentors) about essential affective (feelings and emotions) parts of their experiential learning about CBR, as it is about studying how our invitation to them to reflect and discuss affect may be part of students' transformative learning.

THE SCIENCE SHOP

The Science Shop is a grant program offered by the Women and Children's Health Research Institute (WCHRI) at the University of Alberta (UofA) in partnership with the Community-University Partnership for the Study of Children, Youth, and Families (CUP). The program was launched in 2009 and runs from May to August of each year. It is a funded, training opportunity for UofA students to pursue community-based research (CBR) relevant to women and children's

health topics. To date, primarily graduate students have applied and received CBR Summer Studentships. As an annual cohort, they participate in hands-on learning about the relational, process-oriented nature of CBR and possibly community-based evaluation (CBE) (depending on the project, student, supervisor, and community partner). Students represent diverse disciplines including: agricultural and food sciences, dentistry, educational psychology, human ecology, physical education, public health, and rehabilitation medicine.

Science-Shop applicants receive assistance from the WCHRI Research Coordinator with the application process. Students may apply without a supervisor, community partner, or project. If a student is accepted into the program without a CBR supervisor (i.e., a university-based, academic mentor), the Academic Lead and Research Coordinator arrange supervision. Establishing a mentor-student relationship in the four-month timeframe is challenging, so applicants are encouraged to meet early in the year with potential CBR supervisors. Occasionally, a CBR supervisor will have a project in mind and recruit an appropriate applicant. All supervisors must be WCHRI members. To participate, the student needs access to a community partner or data collected from a partner. Supervisor, co-supervisor (if applicable), and community partner (if known at the time of application) are listed in a Science-Shop application. The supervisor and community partner are each asked to provide a letter of support in the application.

Currently, the CBR studentship begins with a two-day session in early May. In addition, students are expected to attend: (i) a midway meeting to share their experiences and problem-solve collectively; and (ii) a concluding meeting to help students prepare for WCHRI's Research Day. These meetings were added to the program in the last two to three years to provide additional support to students and to facilitate the group as a community of practice. The Research Coordinator and the Academic Lead provide individual support to students throughout the summer. At the beginning and end of the summer, all of the WCHRI summer studentship awardees, CBR and otherwise, gather for lunch to learn about each other's research projects.

Running in parallel with the Science Shop is WCHRI's Summer Studentship Awards. These grants are generally awarded to Faculty of Medicine and Dentistry students to fund research, the bulk of which is lab research. In 2014, three Science Shop and twenty-three Summer Studentship grants were awarded. Students from both programs are expected to present their research products at WCHRI's Research Day in November. During the summer, all students are encouraged to submit abstracts for adjudication through a peer-reviewed process. Other researchers associated with WCHRI also present at Research Day. In the 2013, trainees offered 54 oral presentations and 126 poster presentations. The vast majority of the research is quantitative and lab-based. The Science-Shop students, in particular, contribute qualitative and community-based research. Worth noting is that, in 2013, a Science-Shop project was awarded "Best Oral Presentation" in the category of graduate students (http://wchri.srv.ualberta.ca/researchDay). Research Day and WCHRI as a whole are supported by the University of Alberta and Alberta Health Services (i.e., the Stollery Children's Hospital Foundation and the Royal Alexandra Hospital Foundation).

We focused on the Science Shop as a program with specific parameters of structure, purpose, and time. The program is an instance of engaged scholarship in which the funders seek to

support learning in particular about community-based research (CBR) regarding women and children's health. The program exists within a larger context of a biomedical institute with a membership that studies children and women's health. The institute is a conventional academic unit, driven in a competitive funding dynamic to produce research, situated in the context of a well-established university. Supervisors or mentors who choose to participate in the Science Shop are faculty members of the university. Most of the mentors have experience with and expertise regarding CBRE; using various conceptualizations of CBRE, they understand and have developed relational, process-oriented ways for collaborating with community, government, and university partners.

METHODOLOGY

The intent of the study is to apply the findings in the practice of facilitating learning about CBR and in the practice of CBR. We approached the study as a focused ethnography with a goal of drafting an interpretive description to inform practice.

Focused ethnography is a type of applied research for studying a particular issue relative to the nature of a particular group (Knoblauch, 2005). We, as community-university engaged scholars, have some knowledge of experiential learning about CBR (i.e., facilitating and living through CBR dynamics). This knowledge serves as a basis for studying particular "structures and patterns of interaction" (Knoblauch, 2005, p. 11); we studied students' and mentors' critical dialogue about past feelings and emotions in experiential learning, amid "shared patterns of thought, symbol, and action" (Pinnegar & Hamilton, 2009, pp. 71-72) of university, community, and CBR contexts. The critical dialogue by students and mentors had reflective dimensions, serving as an opportunity for participants to make explicit what may still be tacit knowledge about affect.

We used purposive sampling to recruit participants with particular knowledge and experience (Higginbottom, Pillay, & Boadu, 2013), based on the first five years of the Science Shop. Interview participants included student-mentor pairs with relatively well-developed relationships in which feelings and emotions were an apparent part of their learning interactions. We recruited past Science-Shop students for one focus group and past Science-Shop university mentors for an additional focus group.

In the five mentoring-pair interviews and two focus groups, the interviewer asked participants to reflect on and rationalize their responses to interview questions. Participants are "accountable social agents" (Curato, 2012, p. 581); they may offer ways of understanding affect that may differ from the researchers' perspectives. The interviewer served as a reciprocal conversation partner, responding to participants' intersubjective insights. Given that the Science Shop's Research Coordinator and Academic Lead have first-hand experience with the program, we also interviewed them, inviting them to comment on preliminary findings to provide contextualizing insights (Knoblauch, 2005).

During the interviews and focus groups, we offered participants paper and markers as tools for drawing images, symbols, or diagrams to help express themselves and/or to reflect. Participant-produced art as a method of inquiry invites participants to express emotive qualities of an

experience that may not be accessible with other qualitative methods. Inviting participants to create art as additional data invited reflective dialogue. Art hints at a participant's assumptions, constructs, and emotional responses to an experience. Images that emerge from the imagination may be surprising or unexpected and offer an alternative perspective. Through metaphor, participants articulate intangible parts of everyday life (Cunliffe, 2002) and discover tacit assumptions and knowledge (Ward & Shortt, 2012).

In addition, we studied descriptive documents (e.g., from the Science Shop). We maintained reflexive journals (e.g., written and drawn, during data collection and preliminary analysis) and wrote theoretical memos during analysis.

An interpretive descriptive approach to data analysis was employed. Such an approach "provides direction in the creation of an interpretive account that is generated on the basis of informed questioning, using techniques of reflective, critical examination, and which will ultimately guide and inform disciplinary thought" and practice (Thorne, Reimer Kirkham, & O'Flynn-Magee, 2004, p. 6). We developed a "preliminary 'analytic framework'" (Thorne et al., 2004, p. 5) as a basis for engaging in deliberative, epistemic interviews (Curato, 2012) with the mentoring pairs and the groups. As the researchers studied the transcripts and developed a coherent interpretive description, we developed the analytic framework toward applying findings in the practice of curriculum design for experiential learning about CBR. By choosing to work dialectically with participants, not only we but also participants contributed to "emerging conceptualizations" (Thorne et al., 2004, p. 5).

RESULTS

In the interviews and focus groups, participants identified an array of feelings and emotions as they reflected on their studentship experiences. They described these feelings and emotions in terms of interactions with contexts, which will be described in Part A of the Results. In Part B, we present three categories about affective dimensions of CBR experiential learning through these contexts. Participants reflected and discussed critically: (i) how relationships were learning tools; (ii) how they experienced intense highs and lows; and (iii) how students, in particular, developed as CBR practitioners. In Part C, we identify four conceptual threads running across the data regarding how creating a 'fit' between contexts, people, and CBR activities requires "soft skills", "energy", and relational reflection.

PART A. DESCRIPTIONS OF KEY CONTEXTS

In Part A, we present descriptions of four key contexts of participants' experiential learning about community-based research (CBR): (i) the Science Shop; (ii) the Women and Children's Health Research Institute (WCHRI); (iii) time; and (iv) CBR.

SCIENCE SHOP

The Science Shop is an "internal context" for students to learn through hands-on projects about CBR. In addition to facilitating a constructive application experience, Science-Shop staff facilitate student-group discussion and offer one-on-one support with the Research Coordinator,

the Academic Lead, and/or both staff members. Alma[2] is the Research Coordinator. She perceives her job as being informed by students' interests:

> I'm sort of a coordinator… . It's [Alma's role] a type of coordination but less in terms of administrating. More in terms of bringing the program together, bringing students together, making sure that they are okay, making sure that they have all the support that they need. CBR is complex, and it takes lots of energy, and we expect lots of changes in terms of how people feel and what they experience, so we feel that there is a need for that additional layer of support. (Alma, Interview re: Preliminary Findings)

Jean is the Academic Lead, liaising between the Science Shop and various WCHRI committees:

> My role is more symbolic than anything. I think it is more kind of, I chair the committee meeting, the decision-making meeting [to adjudicate student applications]. … Alma organizes everything and I just join the conversations through the summer as they go. … Being the face at the WCHRI administrative meetings, … and being the ambassador … and arguing for that perspective [regarding CBR and the Science Shop] at those tables is more of my contribution. (Jean, Interview re: Preliminary Findings)

Alma structures each annual cohort's three or four group days to help the students as they share challenges and successes. This approach to supporting experiential learning has evolved over the past five years so that the Science Shop is structured around the creation of a community of practice through the four months of the program.

> We start [in May] with one to two days… We just wanted to bring students together, and we wanted to tell them about the essence of the Science Shop. We invite them to present their projects to each other, and we talk about them and ask, *What kind of challenges do you perceive during the summer*? It is really a group problem solving in a way, and we invite students from a previous cohort to tell about their experiences. We draft a menu of different issues in CBR, and that menu is created based partly on the students' learning objectives in their applications and partly from what we've learned from previous years in the Science Shop. So there is a menu of topics and we ask, *Okay, what do you want to talk about?* And then we go a little bit deeper. So it could be ethics, it could be relationship building; it could be a zillion other things. So it is really bringing together and creating that group dynamic where we are there for each other. … And there are two to three additional days over the summer where we just check in: *How are you doing?* And *Any issues? …* As we get closer to the Research Day [in November] which is WCHRI's day when all the research projects need to be presented, we focus on students' development of their presentations, presentation skills, discussing how to communicate CBR in a very clinical environment, and how to create the poster, and things like that. So as we get closer to the Research Day, the focus is more practical and less, *How do you as a student swing through a CBR experience?* (Alma)

Currently, the Science Shop is a context for students; however, the staff are considering the potential to support mentors (e.g., professional development re: CBR; peer support), too.

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[2] For all participants and to individuals to which they refer, we have replaced real names with pseudonyms.

WOMEN AND CHILDREN'S HEALTH RESEARCH INSTITUTE (WCHRI)

The Science Shop exists within WCHRI even as the program is supported through a partnership between WCHRI and CUP. WCHRI operates with a "traditional" academic orientation to developing research products. Given an emphasis on process, the Science-Shop staff feel pressured to demonstrate that it is a productive program. In keeping with the nature of experiential learning about a relational approach to research, time is required to build relationships and to establish collaborative processes. With the open-ended structure of the three or four group days, the Science Shop is informed by a relational and supportive model of adult learning; with multiple levels of relationships involved in CBR experiential learning, graduate students are the intended type of learner. In comparison with WCHRI's undergraduate, biomedical summer studentships, fewer applicants apply to and are accepted into the Science Shop. The Science-Shop staff feel that they must defend and rationalize existing adjudication criteria to WCHRI:

> And what you are trying to explain to them [WCHRI] is that.... For example, how many applications and how many got funded. And in our cases we have six applications and four or three applications granted ...so it will never be 100 applications - ever, but they want that success rate because that is how you show who you are… . So we are judged by their very strict criteria, and our criteria, as Jean explained, are much more flexible, open and looking at the big picture, we will support this student because she is really interesting. She doesn't have a lot of experience but she wants to learn. What is the Science-Shop grant? Is it training really or it is a grant for established students? Is it only for undergrads or only for graduate students? (Alma)

The staff persistently seek support (e.g., to promote the program) and work with WCHRI expectations that the Science Shop is part of the "WCHRI family" – a context in which members are struggling to understand what each other does ("CBR" vs. "Biomedical"):

> Our WCHRI Director, wants to create that WCHRI family, so everybody who is involved, or who is a WCHRI member or trainee, are all together because our final goal is women and children's health. She is creating these sessions where we are all together. So there are two sessions in the summer and then Research Day where we all get together and students present. For example, … our student can be in a Research Day session, presenting with four biomedical students. … . Basically it's a constant clash between biomedical and CBR, because we are in the context of a very traditional, conservative, academic, biomedical world. And there is this little slice of CBR, and I wonder, *How do you make yourself present and valued in that context?* (Alma)

Faculty members who mentor students in the CBR Summer Studentships are required to be WCHRI members; the application is straightforward and membership is free. Even as they work with students, the mentors are also expected by the university to continue with conventional duties of research, teaching, and service. They juggle studentship activities with the university's expert-hierarchical, product-oriented research system.

TIME

In the data, time is also conceptualized as a context (i.e., a temporal context) for the studentships. It is regarded as a necessary yet limited resource for doing CBR and for undertaking experiential learning about CBR. For example, Lynda, a mentor, observed:

> These studentships are a really good way to let students kind of get a peek of CBR. When I think back, I find it challenging in that it's such a short timeline to do community-based work. It's just so much complex, and takes up so much time. I wish those studentships were maybe done not just over the summer now that I'm reflecting on that. (Lynda, Mentor, Pair Interview)

The data refer to the time required to create student/mentor and student/community-partner relationships and various skills. One mentor, Tanya, described how she works with Science-Shop students:

> [Referring to her drawing, Figure 1, Cover page] So related to just CBR students generally I spend a lot of time on the road, and I think that is a critical piece of the mentorship. So sometimes communities are three hours there and back, so six hours in the car. You are trapped and you talk a lot, and you really get to know each other and you can debrief the process. ... we leave really early in the morning sometimes on these road trips, but also that time is a factor and sometimes that could be 3 in the morning I am up thinking about this stuff. Or it could be tick-tock time is running out- we need to spend our grant money, and we haven't accomplished what we were meant to, and we spent a year and a half building relationships, and/or the student is kind of like, *Oh my god, we are in July here- what the heck have I been doing, building relationship*s? So kind of like, time is a factor and time I think has a lot of connotations- it could be the time you invest in students, but also time always seems to be running out, and you turn around, and it's gone kind of thing. But also relaxing around time and, *Oh wow it is August, and we didn't accomplish what we set out to accomplish,* and that's okay too. (Tanya, Mentor Focus Group)

Typically, CBR requires longer timelines than conventional research (e.g., biomedical lab work); experiential learning about CBR takes more time, too.

CBR AS A CONTEXT

The substantive focus of the studentships, CBR, is more than just a topic of study; CBR is also a learning context. Characterized by collaborative relationships (e.g., to co-create knowledge; to inform decision-making), CBR entails multiple types of stakeholders creating and maintaining relationships with explicit and implicit ways of working together.

One way to perceive CBR as a learning context is to consider comparisons that the students made in the interviews and the focus group, between what they anticipated or expected would happen and the reality of their experiences. For example, Sophie refers to being "on the ground" and trying to find "balance", once she was in her studentship. However, initially, she felt:

> …a little bit of confusion of trying to understand; you are reading all these [academic] papers and trying to understand all this terminology [about CBR], and what does it look like on the ground? So a lot of reflection and trying to understand things. *Why are we doing this? What did we do this?* A little bit of a balance. Looking for a balance. It was a bit overwhelming in many ways. But in exciting ways, I guess. (Sophie, Student Focus Group)

Jean, who is not only the Science Shop's Academic Lead but also a mentor, refers to experiential learning about CBR in terms of living through "it", almost as though CBR were a temporal place:

I think we do disservice to our students teaching them a very naive approach to CBR …this kind of stuff that fills their heads from readings, from whatever. And they go: *"Aren't I supposed to....?"* *"No!"* So the feeling I have when I am mentoring is that, *Go and live through it and see that it's not this...that it's really hard, and it's not for everybody and that it is....that you are not going to save the world. And you are going to make two steps forward and one step back, or one step forward and two steps back. And this is it*, yet there is still something very, *At the end of it, it will be worth it. Your eyes will be soooo...your experiences, and your learning from a whole different perspective will have increased, and you will be that much more savvy*, and that's the kind of learning I don't think a lot of university students get, actually. I feel like, *Yeah go and realize how you work with people. And working with people is hard, not controlled*. (Jean, Mentor Focus Group)

In another instance, CBR partnerships with which mentors may be connected and CBR knowledge may be contextual. Lynda, a mentor, suggests that mentors be able to provide partnership contexts for students:

You would hope that as a mentor if they [students] are working on your project you should have some content knowledge around that, you should already have partnerships...you probably have already partners, whether it is a new partnership or not. It's just a lot less work, and I think it is a lot more accountable to your community partner and the student, because you know hopefully what the hell you are doing. And you are able to spend more quality time with the students because you are working on something that is real, long term. It's not such an artificial student experience where they are plopped into the community. They get to see what day-to-day what it is like working with different partners and colleagues. (Lynda, Mentor Focus Group)

PART B. CATEGORIES

In this section, we present three categories of data that provide insight into affective dimensions of graduate-student experiential learning about CBR: (i) Relationships as learning tools; (ii) "Rollercoaster" of affect; and (iii) Student development.

RELATIONSHIPS AS LEARNING TOOLS

In this category, participants' reflective and critical dialogue about how their interaction with others (e.g., students, mentors, CBR-project partners) served as factors (both facilitative and constraining) that enabled and hindered hands-on learning about CBR.

Students described their relationships with the Science-Shop staff and other students in the community of practice as helpful for their experiential learning about CBR. Students described insights upon realizing that community partners are real people not abstract concepts, real people with their own professional contexts and personal lives. Learning about CBR while in relationship with these real people can be surprising. Chloe learned about CBR through her partnership with a community partner; Chloe described hard work to arrive at a sense of acceptance of not being able to control these relational processes:

I kind of had a feeling that she [a community partner] would leave, just in our previous meetings before. She didn't seem to be happy in her position and it had nothing to do with me. I guess what I learned... is to welcome change, and welcome the challenges of CBR,

because there were a lot of challenges within that four-month period, and a lot of times those things outweigh the good things that are coming out of it. If you kind of look at them as an opportunity to grow, and an opportunity to learn your boundaries for working with a community I think that is a way to turn it into a pro. So my drawing was a palm tree by the beach. They [palm trees] are really resilient and are constantly under different weather, but they are still there and standing after the storm. (Chloe, Student Focus Group)

Participants described how students learned about relational skills by encountering and developing partnerships first-hand. Mentors perceived moments where they could be supportive in a mentoring relationship as students were challenged in their partnership contexts. Olivia, a mentor, describes how:

> More than often I feel like we are having these conversations, trying to pick them [students] back up and being like, *It's okay, this is all part of it*. Rather than them coming in and celebrating, *We had a great turn out and people were talking*. It's usually just when they are feeling like they are failing that I get them in my office. (Olivia, Mentor Focus Group)

Science-Shop Staff describe that students learning about CBR through their relationships with various people. For example, in this exchange, Jean and Alma describe "levels" of mentoring:

> "Jean: So the relationships are all the relationships not just mentorship but community. And it could be with other Science-Shop students, with the community of practice, it could be with the supervisor a dynamic between the supervisor, their thesis supervisor, the Science Shop supervisor, Alma, and the student...
>
> Alma: Our group sessions as well, right?
>
> Jean: Absolutely.
>
> Alma: In a way the program is structured like reality. That is, mentoring probably has a number of different layers. So it's not just one relationship with one person. If we think of one of your students, Jean - she had a very good relationship with you but also has a PhD advisory committee that is a completely different story of relationships and agendas. … Then there is a community partner, and there are community members as well that you have to engage so we are talking a huge range of relationships, different levels of mentoring that students have to negotiate: from somebody who is a traditional thinking researcher, and then a CBR researcher and mentor, and then you have a student who is doing it, then you have a community organization, then you have community members, then you have your colleagues around you in the Science Shop, then you have the clinical, biomedical students as a broader context… ." (Interview re: Preliminary Findings)

During the studentships and through the community of practice, students have space to be vulnerable with each other as they grapple with challenges and as they practice the relational skills that are essential not only in CBR but also in life (e.g., other work relationships). For example, Alma affirms that:

> [Relationships are] a learning tool. Because when they [students] are done, again if they are going to continue whether knowledge translation or participatory [activities], they still

have to negotiate all these actors, whether they are policy people, or whether they are community people, whether they are academics. So if you learn or have that experience of knowing how there are different levels of negotiation, there are levels of power and different interest and different expectations, then you can take that experience, develop skills, and apply them. And this is what we are trying to argue with WCHRI - that it is not so much about CBR as a concept or approach to research. It is, *What can you learn in CBR that you can take to whatever you do for the rest of your life?* And so that's one of the things, *How do you negotiate these relationships?* (Alma)

The relationships that are created (e.g., between Science-Shop staff and students) may extend beyond the program, because these relationships with accompanying feelings (e.g., of surprise, frustration, and vulnerability) have shaped the students and become part of their lives. Through these relationships, the experiential learning may continue.

"ROLLERCOASTER" OF AFFECT

In a second category of data, insight into affective dimensions of graduate-student experiential learning about CBR was apparent through several metaphors regarding intense experiences. Students and mentors discussed helpful and constraining moments and sudden and/or gradual dynamics of feelings and emotions. One student participant used the word, rollercoaster, as a metaphor to describe an emotional intensity during her CBR Summer Studentship. Kamilla described that:

> … it [the studentship] was kind of a rollercoaster. It was like either a lot of negative emotions or...and positive after the meeting goes well, and Tanya [her university mentor] is there, and we sort of seem to be moving forward somehow until you realize that you are not moving forward, and they [community partners] are not returning your emails. They say they will be at the next meeting in June, but it doesn't happen, and you see the time, how do you say going... Slipping away. ... *Oh my gosh, where are we? I am supposed to be collecting data. I am supposed to be conducting this project. Where is that going*? And again I was emotional over it because of the personal stuff. (Kamilla, Student, Pair Interview)

A similar intensity is evident as Olivia, a mentor, recalls concern for a student who appeared to feel so low that she might not complete the experience which was also a basis for her doctoral studies. Olivia described:

> … a tipping point. It's easy now to [hear the student] say, *I wasn't going to leave and that sort of thing*. But there were probably some days where I looked and said, *She is done*. When I think from a supervisor point of view, we invest so much time on our students you don't want a PhD [student] to leave after two years or a year and a bit, whatever it was at that time, a year and a half. You just think, you know, so anxious for a few reasons, *this student that has so much potential, is she going to be done? Is this going to knock her out of the program?* But that is the work we do. And I keep saying that I know that we have these super highs and these kinds of lows, but I say the biggest thing is the anxiety, because you don't know the outcome a lot of times in this type of work. (Olivia, Mentor, Pair Interview)

Yet, as with a rollercoaster, not all moments are negative or difficult; positive moments arise, too. For example, Teresa, a mentor, recalled that:

> There were moments of elation that I know in conversation after Carla [the student] had a meeting with her community members she would come back from every meeting she would be super excited and energized to proceed with the project but also tackle tough issues as well. I didn't think about that until I started my drawing. (Teresa, Mentor, Pair Interview)

In a pair interview, when discussing the invitation to draw the essence of their experiential learning about CBR in this summer studentship project, Tanya, the mentor initiated this exchange:

> "Tanya: I think you describe waves; I might pick blue and I might say waves, so waves in terms of...even for me because I am fairly flexible and adaptable, waves - so ebb and flow and as things go high the water has to shift and you have to change your thoughts about how it is going to go. Totally shift your.... and for me I was okay with that. You [Kamilla, Student] were not okay with that. So it's almost like maybe Kamilla was the boat that was smashing up against the wave going, *No, I am going to push back on this. I don't want to ebb and flow with the waves; I am going to crash against it.* And that is probably why you experienced so much frustration. Like, *Why is this water coming up to my deck? I am going to just sweep it off and get my house in order.* I think in terms of that relationship, and that is where I had to shift my mentorship strategies, because that isn't your personality of adapting to new situations on the spot, because there were many situations where we had to do it on the spot in a meeting; on the spot shifting gears entirely. ... I don't know if you want me to draw that (laugh). …
>
> Kamilla [Student]: It's not only a wave but like that. It's like they are going somewhere but you don't know where they are going. You are sort of going with them.
>
> Tanya: What is that called, tidal pool? Swirling down to the bottom...trying to get out of it.
>
> Kamilla: It was a big question mark: *Where the heck are we going*?
>
> Tanya: Whereas, I sort of just went, *Okay, yeah, we are riding this. It's a little bit bumpy but....*
>
> Kamilla: For me, it's a little more intense, like a waterfall basically: free-fall.
>
> Tanya: And I think that was for me to try and figure out ways to reduce your anxiety, and reduce your stress about the process. Because to me, I can see that it would be incredibly frustrating but it didn't bother me, but it really bothered you, so I had to figure out ways to get you into that, *It's okay, we will go with the flow*." (Pair Interview)

In the mentors' focus group, Tanya recalls how she used the metaphor of a wave in the pair interview with her student who had used the word, rollercoaster. Tanya, in referring to her sketch in the focus group (see the full quotation on p. 1 of this report) described:

I started with the wave and that was how I described that one experience with the student. I put red because it can be really frustrating, but the essence I think is there are really big highs and then there are really big lows, and sometimes you feel like you are crashing and drowning at times. (Tanya, Mentor Focus Group)

Another mentor, Teresa, in a pair interview described this up and down dynamic of feelings and emotions in her drawing:

At the bottom is the ground because obviously the girl, because it's gendered, she is skipping along and there are moments of elation because to me that's moments of energy you get throughout the project. But there is always this coming back to the tough part of the project, which is my rain cloud and all the rain, and the slogging through the difficult parts. But at the very end where she skips out to the sunshine is the achievement at the end of the project. But there is this groundedness to it as well. There is this coming back and having to do the tough work that is required. … I realized I was drawing Carla [the student] and myself and Carla, so we were totally the same person. It started off as Carla because this is her energy coming back from a meeting with the partners. Or even after a meeting after we had a meeting because there was this energy. And all this stuff at the end was partially me too, because there was a lot of work because as the mentor you feel at the end a sudden push. And this is Carla celebrating the success of her project. (Teresa, Mentor, Pair Interview)
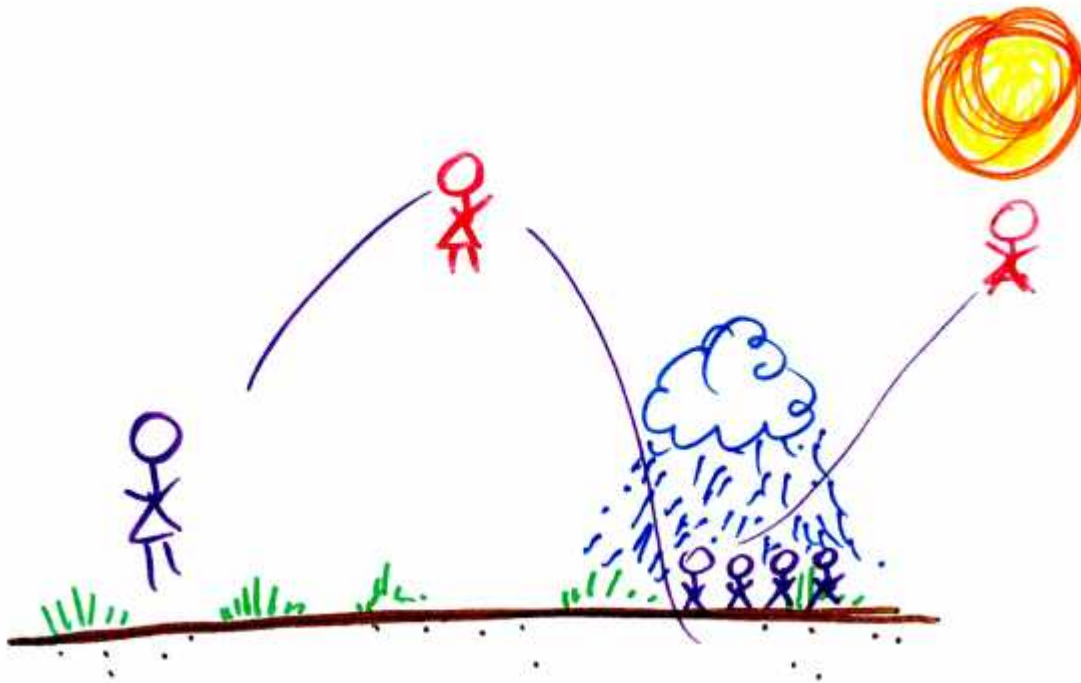

Figure 2. Essence of the mentor-student experience in the CBR Summer Studentship (Teresa, Mentor, Pair Interview)

The up-down dynamic through CBR Summer Studentships (e.g., negotiating "levels" of relationships; feelings of "loss of control") involves participants' personal histories and

contributes to potential "personal maturation" not only regarding CBR but also regarding relating to and understanding other people. Personal stuff (for student, mentor, or community partner) may be a factor that helps or constrains experiential learning, contributing to a sense of a rollercoaster or wave metaphor. Another student, Chloe, described the intensity of her experiential learning in terms of:

> Yeah, I guess sinking...without really trying to put a label on it. But it was bad for a while, and it wasn't until after that I realized why it was bad. It wasn't just the school; it was me personally going through a very rough time. That had a lot to do with it...was my own personal life, and then you can't separate that when you go into a community. But at the same time the community recognized after that incident that I am human. I talked to the woman the next day and she was like, *Chloe we all have days like that. No one felt you were disrespectful or anything. You were just having a bad day. That's life. That's the way this works. It would be weird if you came in everyday honky dory. It would be so weird.* (Chloe, Student, Pair Interview)

Alma reflects on the metaphor of rollercoaster in the data and observes that:

> A rollercoaster is a good metaphor. It is difficult to describe at the beginning - students are full of enthusiasm; you know it is going to be awesome. The challenge for us or for me is how do you prepare them [students]? You don't want to be a downer but at the same time you know that it will go up and down, so the rollercoaster is the right term, for sure. And for different people, the lows and highs may be very different. (Alma, Interview re: Preliminary Findings)

This dynamic of affect (of highs and lows; just-keeping going and intensity; high and low risks) relates not only to the nature of CBR and experiential learning about CBR but also to the "dynamic dynamic" (Alma) of the Science-Shop program – with its identity and objectives relative to larger contexts of WCHRI and academia. Adjudicating student applications relative to the larger contexts' drive for products versus the relational, process nature of CBR creates a tension that characterizes the program and its perceived success. As the staff work with students, they, too, may experience feelings of accomplishment and positive emotions but then feel dragged down by a lack of support from the larger contexts, in part due to lack of understanding about the nature of CBR. As a pair, the staff advocate for the program even as they create space for the highs and lows of experiential learning about CBR:

> "Jean: We have ears. I mean people are listening and I think trying to listen, and so it's helpful for that reason. If really there was a wall [at WCHRI, rather than an openness to hearing from us], I think we would have shut 'er down by now but I think this would be helpful for us.
>
> Alma: It's that rollercoaster for us as well. There are lows and highs.
>
> Jean: Exactly!
>
> Alma: My final thoughts are that it's going to continue to evolve and I don't think we will ever nail it 100% but I think it is the beauty of it. It will never be: a check, check, check kind of situation. It will be always an opportunity to think and rethink. This kind of work

or this kind of a program forces you to think all the time." (Interview re: Preliminary Findings)

STUDENT DEVELOPMENT

In this category, we present data with insight into affective dimensions in student development. On the one hand, when invited in the pair interviews and student focus group to reflect on what they learned during their CBR Summer Studentships, students perceived their own growth as CBR practitioners. For example, Carla recalls that:

> I still remember that's how I, all of a sudden realized that you can't put participants on the poster and just refer to them as subjects. That was a huge shift for me. I don't know, yeah, I think that's why I was so drawn to the qualitative case notes too. I wanted to somehow show something more than what the numbers are saying… more than what 100 participants could express. So for me, I think doing CBR makes sure that your population is in your face instead, like you said, reading a book about them. It will give you a different level of commitment to what you are doing. (Carla, Student, Pair Interview)

Some of the data also refer explicitly to affective development. For example, in the way in which a student speaks or describes a situation, she demonstrates confidence as a CBR practitioner and/or as someone who chooses not to practice CBR. Yvonne said:

> I think the most emotional part was working with other people's timelines. Because community-based research - I think the one thing I learned the most is patience because you are working with people who have full-time jobs, and your research is always at the side of their desk kind of thing. So it is hurry up and wait kind of thing where you are trying to get something done, but then you have to wait for someone else to get back to you, or meetings get postponed. (Yvonne, Student Focus Group)

In some instances, mentors support students during particularly challenging moments. Mentors' perceptions of student development are included in this category for the perspective that they provide on student abilities, skills, and transformation (i.e., how affectively and/or cognitively students are re-framing their experiences). Tanya observed:

> I think so much of being a good CBR researcher is your personality and it is those soft skills. And again, that's with students too. Some of them are very adaptable, and open. And *okay, I showed up at a community meeting, and it started two hours late, and only four people showed up, and this was my big focus group to collect all my data* or whatever and some students are much more adaptable and you can talk about and can debrief whereas other students had that...they are very rigid: *This is what I learned, this is how it was supposed to go, and I am applying my methods course, and my CBR courses and it's not working out*. There is more of ... like you have to really mould those students and mentor them a lot more than some of the students that come into it a little more open-minded, and I think that is more personality probably, versus training, because they all have the same kind of training. (Tanya, Mentor Focus Group)

Students and their mentors experience student development first-hand, moment by moment, during the CBR Summer Studentships.

PART C. THEMES

In this section, we present four themes that are conceptual threads that run across and among the categories presented in Part B. These four threads are named: (i) Finding a "fit"; (ii) "Soft skills"; (iii) "Energy"; and (iv) Relational reflections.

FINDING A "FIT"

In this theme, the data illustrate how students and mentors seek to find meaningful connections in the experiential learning about CBR. A few factors need to be in place for helpful and mutually-beneficial experiential learning. When developing an activity for their studentship, students may hope to incorporate their interests regarding CBR and possibly their own substantive research. Sophie recalls that:

> With the mentors, I think having the opportunity when you do set your project objectives at the beginning, also using that opportunity to engage with the mentor in a conversation around what do you [as a student] hope to achieve, or what kind of experiences would you like to get out of it, because CBR is so broad. Like, *Do you want to focus on the knowledge translation piece*, especially if it ends up being a four-month kind of experience, what would be critical skill building for us as students, and hoping to get that, and being clear on that from the beginning. … Not *here is your project and here is your role.* Negotiating a little bit [about] those experiences. (Sophie, Student Focus Group)

To participate in the Science Shop, mentors described a need to find a "fit" or "match" between a number of factors: (i) their professional needs/interests as academics in academia with pressure to publish peer-reviewed articles and to obtain grant funding; (ii) student preparedness, expectations, and personalities; (iii) activity/focus of the student's work (e.g., student-initiated; within mentor's program of work; community-initiated); (iv) time available (i.e., preferably longer than four months). For example, Olivia observed that mentoring her own graduate student in the CBR Summer Studentship helped her to rationalize the time required:

> That's the hard thing. It's hard to not sound selfish in it but it is. You have to look out for yourself too and I agree 100% it has to be win-win. I was fortunate that the student I had was my student. If some student, if I was contacted and somebody said, *Can you take on this student?* I would probably think, *Heck no,* if it wasn't in my [research] area. (Olivia, Mentor Focus Group)

In another instance, Jean expresses frustration when feeling obligated to mentor a student who does not fit into her research program or is not one of her graduate students:

> Because when it is Robert in [the Faculty of] Education, and Celine in Education, and so what is it...I get nothing out of it on my CV. So yes, a project where you are working in community and thank God, somebody can take this on... No, it's *There goes my summer. How am I going to manage this? May to August, what can I do when I go on holidays?* It's pure servant to them, because you don't get a publication, you don't get a grant. They don't come and work on anything on your stuff to help you out to get to the next step because they are busy doing their four months. So there is no benefit. (Jean, Mentor Focus Group)

When reflecting on Jean's observation and considering recommendations, Tanya added to the discussion:

Well, I think where you get stuck is if students apply [for the CBR Summer Studentship] without a supervisor. So those students who apply without a supervisor then it is matching somebody, so they have a project in mind and they really just need a supervisor. So then you [Jean] end up having to mentor lots of those students by default [as Academic Lead]. Versus a student coming in where they're carving out the project probably related maybe to their supervisor's work, or some offshoot of it. So you know they are going to get a different kind of level of supervision- there is already a relationship in place, versus dumping a student kind of on somebody and they are interested in whatever in the schools systems and you are like, *Okay, that means nothing to me but sure I guess I am the CBR researcher so I will mentor them around that kind of stuff*. (Tanya, Mentor Focus Group)

In turn, students also perceive whether a mentor is available or not to them and whether a community partner is available or not to them. Availability may take the form of degrees of advice, direction, or openness to discussion about the activity or focus of the experience. Kim, a student, recalled her studentship and that:

The most stressful part for me was actually that my academic supervisor had very little-, she showed very little interest in helping me to deal with this [a shift that occurred in the partnership dynamics]. I am kind of grateful for that now because I know how to do it, and I had to figure it out for myself. I don't think it was her intention; she had a lot of stuff going on. (Kim, Student Focus Group)

Finding a "fit" is a stressful dynamic in the establishment of a studentship. In terms of having a match of factors or not, mentors reflected on their own growth and the constraints within which they strive to mentor the CBR summer students. The mentors described a need to express their feelings and emotions yet also felt a dilemma about showing that affect with the students. For example, Olivia states:

It is my job to support the students. I don't just send someone in there [to a community context] blind. … I find that particularly challenging with my PhD student who at the end of this they are going to be a professor, and they are going to come out. So I feel like I struggle because they are coming through, and I need to provide them with that training so that they know that so and so is an idiot. I wouldn't say that but to say, *I don't agree with how this person is behaving*. … I don't want my student walking away thinking, *You know what, Olivia just saw how this unfolded and she is okay with it*. So I balance that and try to use words that are appropriate and say, *I probably wouldn't have went that route,* and trying to explain; particularly with our research approaches and things that we are doing … . Yet I struggle with that professional line and what I should and shouldn't be sharing with students. (Olivia, Mentor Focus Group)

During the mentors' focus group, two participants had this exchange:

"Olivia: To me it's not necessarily the content that I find time consuming; it's the process part of it. So even if they [students] are paced in these situations if they have access to woman and children whatever- environment they are going to be, that's not usually the hard part. Usually it is all the process things that go with the CBR. So I think it's probably going to come back on the CBR people. I think that's just it. Maybe it is just trying to....the hard thing is there are not a lot of us out there but because it's so time consuming and all the other things that go with it....

Jean: Totally.

Olivia: So I don't know if there is a way around that. But I agree if the content [of a studentship] more matched [to a mentor's program of research] and that sort of thing then it would just make a lot more sense… . You also don't want someone coming in and taking four months just to build a relationship, which we all know it can take that long. So then in four months you just built a relationship and that was their experience, so that's an important piece of it ...but I'd rather have those relationships developed, and talk about it, and get them [students] in there and they still have to constantly be working on those relations when they are in there." (Mentor Focus Group)

In CBR, achieving mutual benefit through collaboration, across partners, is a goal. To undertake a successful CBR Summer Studentship, the experiential learning may need to benefit not only a student but also her/his mentor.

"SOFT SKILLS"

Much as students experience collaborative research they are also living through, first-hand, relational skills through interaction with mentors, community partners, Science-Shop staff, and possibly others (e.g., graduate supervisors). These skills pertain to not only CBR with its relational nature (i.e., collaborating with partners) but also working with a mentor (or student) and the insight of "relationships as learning tools". In an exchange with her student, Tanya introduces the concept of "soft skills":

"Tanya [Mentor]: Yeah, because I don't think that kind of research is for everybody. You can be the most brilliant CBR methodologist and still be terrible at doing CBR, because it is soft skills actually. It is a lot of- it is soft skills, because you are in a partnership, and you are dealing with different personalities and different people.

Kamilla [Student]: And there is this part of taxonomy of situations: simple, complicated and complex (from Patton's book on developmental evaluation), and basically anytime you deal with people it is a complex situation because you don't know what to expect. And it is hard for me as well. And I personally, I know I interpreted it in terms of me not being able to do that, instead of maybe seeing it as an opportunity for learning. Like, the first thing that comes to mind is, *I should be able to do this as an evaluator*. That kind of stuff. That doesn't help either.

Tanya: Or you individualize it versus saying, *As a group we have to figure out how we can do this better together. It's not about me.... part of it is about me, but not all of it*. You can't take ownership over all of it; only a fraction." (Pair interview)

As participants critically reflected and discussed the experiential learning and associated feelings and emotions, they also talked about how development and use of "soft skills" was an important dimension of the experiential learning – in terms of fine-tuning an "ability to let go of personal feelings"; being patient, resilient, flexible, adaptable, and respectful; and "having confidence".

For example, during the student focus group when invited to reflect on an emotionally intense part or period of experiential learning about CBR and to draw how they responded to it, Yvonne described her sketch as follows:

It is two hands kind of facing each other and my actual... . I had this project in mind and I was really excited to do it, and had built a bit of a relationship with this community partner when we were all set to go but it wasn't feasible to do in the four months. There is no way it would happen, so the ability to let go of that. It was hard because you build this idea up in your head and are ready to go forward with it, but being able to realize your timelines, and the time you are willing to invest in it, and all that kind of stuff to go with it. Maybe it is a good opportunity but maybe not right at this time. So I think that was a huge thing, and that feeling proceeded throughout the whole thing where you had to let go of all the control that as academics we have kind have got used to, where you email someone and you expect them to email you right back and you set up meetings and expect it to happen. So the ability to let go of those personal feelings, and operating on that academic mindset. You have to let it go. (Yvonne, Student Focus Group)

Figure 3. An emotionally intense part or period of experiential learning about CBR (Yvonne, Student Focus Group)

Throughout the interviews and focus groups, students and mentors related to each other, with some participants completing each other's thoughts. Participants described how they related to each other, in their pairs, sometimes in terms of the same "soft skills" required to practice CBR(E). Tanya and Kamilla elaborated on what they meant by "soft skills":

"Tanya [Mentor]: I think a lot of it is that you need to have facilitation skills. And in order to be a good facilitator you need things like empathy, willingness to listen, withhold your own judgment, kind of friendly but also motivated to move through agendas, and that type of thing.

Kamilla [Student]: Also skills to interpret, like, *Okay, this doesn't work; where can the situation go? What will be our plan B, C, or maybe D*? Thinking on the fly; that is really hard. It's hard for some people who… again, if you have anxiety, a lot of your mental resources and energy go to control your anxiety, and you only have so much to attend to other people.

Tanya: That is really well said, Kamilla, because I think that's exactly one of the biggest skills is being attentive to everybody else [e.g., in a partnership meeting], and seeing, *That person seems uncomfortable right now. Could it be about the topic? This person is doing something over here*. So you are not just facilitating around information you are also

facilitating around potential relationships, and things that are happening…" (Pair Interview)

In the mentor focus group, another mentor reflected on her relational skills and how she approaches mentoring, not only by describing these skills to students but demonstrating them. Lynda reflected that:

> I am trying to think of how I come across to the student. And I think what I have come to in CBR is a sort of calm place among the chaos, or blasé, or some might think I am cynical, but things that.... knowing that things are always going to go wrong, there's always going to be drama with one or two people, whether it is your own students or people in the community. So as students work through this process, and they are on top of the clouds and are, *Yay, this is the best thing ever*, and the next day they are mad because something happened. To be quiet and okay during the process. I think that's what, I hope, what I emulate to them. That you have to roll with it, like you said, and you have to be okay with the chaos. Things will work out- *We will figure things out*. And that is something that I had to learn something for myself probably for the first five or six years doing this, or you burn out really quickly. So, it's trying to show them how to be a CBR researcher in a positive, quiet space… . (Lynda, Mentor Focus Group)

The need to develop "soft skills" for practicing CBR was apparent to Alma, too. She said that:

> In the community, we are not just exposed to research-focused experiences; we are exposed to a gazillion other things, sometimes personal, sometimes- and that is that connecter sometimes that makes us understand. And I noticed as well, in this relationship between the mentor and student if there is that touch of, *Okay, now I get you. Now I understand where you are coming from-* that dynamic can actually change into, *Okay, now we have a human presence, a human touch and we can easily work as a team*. (Alma, Interview re: Preliminary Findings)

Alma's insight, that those "soft skills" are helpful not only in doing CBR but also in learning about CBR through student-mentor interactions, reflects her perspective as someone that facilitates experiential learning about CBR in relational ways. An approach to experiential learning about CBR that is sensitive to relational skills is consistent with the nature of CBR.

"ENERGY"

Across the data, students, mentors, and staff used the word, energy, when describing requirements for experiential learning about CBR. During data analysis, we coded the word, energy, as both an emotion and a feeling, relative to the surrounding text. "Energy" appears to have an affective dimension. Chloe, a student, described a period of self-doubt and loss of "emotional energy" during her studentship and found support among other students when they met as a group with the Research Coordinator:

> I just remember it was an adjustment for this type of work. … I remember one time coming to group and- I normally don't really share these things, I don't make a big deal out of them, but I got the volunteer of the year award for when I did my work with the community… . It was really kind of emotional because it was towards the end [of the studentships] when we were meeting and everyone was kind of very supportive. We really don't get rewarded a lot for the work we are doing. It takes a lot of energy emotionally, and even like physically to

do the work that we are doing, so getting that reward and sharing it with the group that I felt like a part of the whole experience. (Chloe, Student Focus Group)

Kim, also a student, integrated her CBR Summer Studentship into her thesis; the CBR activity was her thesis work. However, she realized that the experiential learning was not a top priority for other people involved in the activity; dealing with that difference required "emotional energy":

I feel like in my situation it might have been more that I was doing trainee research, and so I was being put on the backburner for that reason, and not because it was research versus work-life balances of different partners, or anything like that. I am not sure...so that is what I took away from that. I don't think particular partners have issues that...I don't think that a community partner has issues that are inherent to being a community partner, but it's just in terms of time, dealing with different people's timelines, and things. Everybody faces the same restrictions or changes, but it did take an incredible amount of emotional energy to have to deal with the different terms, for sure. (Kim, Student Focus group)

In the mentors' focus group, participants used the word, energy, in a few ways to indicate that it can be gained, lost, and used. For example, Jean describes that collaboration is a source of energy for her:

I think the important aspect [of CBR] for me is that ongoing negotiation of, *Is this what we want to do together, and are you still in or out?* So it is that constant discussion about, *Are we doing what we want to do together*, and not setting it up like typical research...setting it up and going for it and just doing it. And like Lynda [another mentor participant], I get energy from being around people, and talking, and learning from others how.... That is probably one of the things I find intriguing is that- *Is that how you do it in your system? Is that how it is?* I think CBR researchers are the least naïve, although we are painted with that brush of the corny whatever, I think we are the least naïve researchers on campus, because you are called to task constantly by your partners about, *You don't know anything*, that *You don't know what you are talking about here*, and *This is how we do it in this government system*, or Aboriginal community or whatever. And I like that challenge. (Jean, Mentor Focus Group)

However, energy may be drained away, too, when mentoring CBR activities. Lynda describes feeling a sense of:

Disbelief. *Like really, do I have to tell you that it is inappropriate to send off or fire off an email because another student said something and you are having a bad day,* and now the trickle effect is that for the whole week we have to have a team meeting and I have to send out an email. So it's like, *Come on*. It's frustration. It's exacerbation. It's that kind of thing. I was a high school teacher before this, so I experienced a lot of this but I was hoping that once I got to a level where I'm working with PhD students, or colleagues, or community team members that those kinds of personality difficulties take so much energy to deal with, and really has for the most part zero to do with the project; just how we relate with each other, and how we work together, and how we treat each other. (Lynda, Mentor Focus Group)

Tanya, a mentor, described an acquired skill of learning where to use or "spend" her energy. She describes that:

>Over time you sort of learn like, *What am I gonna spend my energy on*, and I think about some of the most difficult situations, and the having to go through those experiences to know I will not do that again, and also being very clear with my students about that. And I think I have been lucky because many of my students did an 8-month practicum related to a course, did the WCHRI summer studentship, ended up working with me as an RA [research assistant], so I feel very much we are colleagues on a certain level. So we can talk those things through … I want them to be really savvy about these situations and be able to mentor future students in that way. …So I protect myself in that way when I invite students in to work with me. I am not going to just send somebody out into a community and for the four months. It is like, *If you are going to commit to this you are actually committing to the next few years, but I will pay you, and you will be my RA, and it will be fabulous,* and all this stuff. … So being really careful about how I invest my time, knowing that the levels of potential frustration and that. (Tanya, Mentor Focus Group)

In some instances, the word itself is not used but a metaphor of energy or movement is used; the words, resonance and flow, occur. For example, in the student focus group, Sophie described:

>I think that during the WCHRI [studentship], the project was, when I came on board, was already kind of up and running, partnerships had been established, and it was a good flow. The [community partners] were a really good organization, really believing and they had resources to carry out the project, so there was better back and forth. (Sophie, Student Focus Group)

Shauna, a student, describes feeling that the CBR activity was practically effortless:

>I felt really excited the whole time because it went so well. … Well, the first workshop [with the Science-Shop staff] really helped me before I went in [to the community setting] because I hadn't started the project. … when I got there it was no problem, and I really felt excited, interested. And it didn't feel like work because you know how when you are enjoying something it doesn't feel like work? And even some-, one of the participants was like, *Thank you so much. You did so much work*. I was like, *You did so much work*. To me it didn't feel like work. It was really neat. (Shauna, Pair Interview)

In the interview with the Science-Shop staff as we considered preliminary findings from the present study, Alma used the word, energy, in her first response to describe her role in the Science Shop: "CBR is complex, and it takes lots of energy, and we expect lots of changes in terms of how people feel and what they experience…". When describing the third and fourth days spent with the student group, later in the studentships, she uses the word, "swing", in terms of learning how, without too much effort, to do experiential learning about CBR: "So as we get closer to the Research Day, the focus is more practical and less, *How do you as a student swing through a CBR* experience?" When reflecting on efforts to describe the value of CBR and the Science Shop [to others in conventional academia], Alma refers to having more "energy" on some days than on others:

>And so it's a constant clarification, and some point you are just tired of saying the same thing over and over again. So we have bad days when we are like, *Whatever, let them think whatever*. And then we have good days with more energy when, *Okay, it's really time to*

nail it and really change something. And it is a constant give and take. So you have to compromise on some things in order to get some other things. So it's very dynamic. (Alma, Interview re: Preliminary Findings)

RELATIONAL REFLECTIONS

This theme pertains to the conceptual thread in which participants explicitly comment on and discuss what they think and feel about being invited to identify feelings and emotions about past experiential learning about CBR. Participants reflected individually (e.g., through personal perspectives, drawings) and together in two ways: (i) about whether and how reflection occurred during the studentship; and (ii) about the feelings and emotions that arose during the experience.

Regarding whether and how reflection occurred during the studentship, participants considered if and how they reflected (e.g., journaling, debriefing) about their experiential learning during the CBR Summer Studentships. For example, Sophie, a student, recalls how debriefing helped to cope with various feelings during the experience; she reflected on and made some sense of her experience; then, she was ready to apply what she learned:

> So you think your research pieces are just a little piece, insignificant kind of compared to the daily lives they [participants] had. So being part of that led to a lot of feeling powerless, or feeling anger, or feeling you want to change things, and I think what was really helpful was having debriefing meetings after these focus groups with part of our team here at CUP and some of the community partners; so just talking it out loud and debriefing really helped process all this information. And you start to think, *How do I use this to inform action… .* (Sophie, Student Focus Group)

In some cases, through an interview or focus group, participants re-connected after a significant amount of time. This appeared to be the case for Carla, a student, and Teresa, a mentor. When asked for thoughts on reflection in experiential learning about CBR, they reflected critically together:

> "Teresa [Mentor]: There is a lot of emotional work that's attached to CBR projects that is under-acknowledged, and probably not managed. I think we do a lot of debriefing in-house [at CUP] and I know from conversations with Lynda or Jean we have conversations about, *What is this anyway*, or frustrations about partners or about writing grant proposals or things like that, just different expectations and ways of operating. So there is a lot feelings. And from working with communities in the past I know feelings can get hurt quite quickly. I think that it needs to be discussed more in terms of doing CBR. Because while there might be an element of legitimacy in the work, at least in the ivory tower no one can throw rocks at you. But, I know that in past reports I had to put together editing reports because the city had deadlines. So everything is on their terms. And so, kind of feel a little bit like you get pushed around a bit by community partners. And you have to be accommodating all the time and it can be quite emotionally taxing at times. I think that does need to be somewhat acknowledged as to the effect that has on researchers. I think we are just expected to just take it. We don't even acknowledge that it might happen. So you get frustrated and you don't even know why you are frustrated. Instead of recognizing that there are these tensions that are inherent in the research process that are probably always going to creep up and to be prepared for it so you are not caught off guard. So you can go in and expecting, *Yup this is going to be a difficult meeting*, or *This is going to be a bit…*

like if you're going to deliver a message about the project it might not be aligning with what your partners want to hear. There is a lot [of] thinking about it now that needs to be developed in training CBR researchers.

Carla [Student]: I think too having some sort of debriefing with your community partners in the end because they have felt something too. And you want to make sure they consider participating in future research too. So I know I had positive feedback from [three community partners] but I wish that we could have met at the end…because that would have been more personal feedback, so I wish they could have had the opportunity to have feedback on the process – more on how they felt.

Teresa: There is something bizarre about coming together for a short period of time intensely on a project, and then no communication – it's done. Because you do form a relationship. You have some good jokes and etcetera, and you know these people, and then we are so used to that coming and going in academia. It becomes now that when I meet people I don't attach to them as easily: *It's nice to meet you*, but there is no relationship past that functional point in the process. It can be quite lonely after a while too. Especially for partners. Because they might not even know what came of the research, and can make them quite ugly inside." (Pair Interview)

Other participants study and/or work together on a regular basis. The student-mentor pairs built their relationships, sometimes prior to and continuing beyond the CBR Summer Studentships. Some of the students know each other, some through course work or other campus opportunities prior to the studentships. Some mentors work closely together; however, one had never met the other mentor participants prior to the study. Some mentoring pairs have an additional dynamic on top of a studentship because the student is working with the mentor to complete a thesis and/or as a paid research assistant.

Regarding the feelings and emotions that arose during the experience, participants were invited to reflect about affect in relational dynamics during the CBR studentships. In addition, the participants spoke from the contexts of their current work and lives. For some participants, critically reflecting on and discussing feelings and emotions about the experiential learning had not occurred before the interview or focus group. Barbara, a student, described appreciation for the opportunity to reflect, as provided by the pair interview:

It's a good opportunity at this point as we are doing this, to think about why I am doing what I am doing, and as Lynda [Mentor] said your values as a researcher, where you hope to go with different projects. Basically, it is why I am doing what I am doing, and taking a step back, and affirming in a sense that I enjoy this. A lot of time throughout your day you don't get to sit and do a lot of reflecting, and you just keep on checking off the tasks. When everything is said and done, it's enjoyable and rewarding work, and I'm very fortunate to get to do it. It's just nice to take the time to talk about that with people. (Barbara, Pair Interview)

During the interview regarding preliminary findings from the present study, the Science-Shop staff reflected on the program and the findings. They considered how, during each summer's

program, student participants describe CBR and how those descriptions are a reflection of the program. For example, Jean describes how she feels about such moments:

> Now we are kind of at this stage where we [the Science Shop] are looked at and examined and it is fine. I think it is great. I think we need to look at our practice all the time, but I think people are looking at us and saying, *What is this Science Shop? What are you guys doing?* And when you have somebody [a Science-Shop participant] get up and mumble their way through something and don't know how to nail down what they are doing in their project, you kind of go, O*h god*. Oh yeah we don't know how to talk about this. We don't know how to articulate anything meaningful about what we are doing at all. It's just this (babbling talk) and people go.... (Jean, Interview re: Preliminary Findings)

The staff describe ideas that arose during this interview (re: preliminary findings) about how to help students to reflect (e.g., a map to describe a student's various contexts during a studentship) and about how to prepare for an upcoming meeting with WCHRI about the Science Shop. They also suggest that mentors might benefit, too, if they were involved in the Science Shop's community of practice. Alma states that reflection is necessary during experiential learning about CBR (e.g., reflecting how "personal stuff" may be a factor in what is learned):

> We can talk about, like for different people, [student] lows are very different and ours [as Science-Shop staff] are different. But I agree with personal stuff as well here, because again going back to that personal relationships or personal contacts or something personal in the community or with your mentor or in the whole process can really trigger something that is sitting here or here, and so whether.... it just triggers something that you didn't resolve with your partner or your children or your mother or somebody, ...so, you have to reflect on your personal things as you are going through the (research) process. (Alma, Interview re: Preliminary Findings)

The staff (Jean) noted that the pair interviews were helpful for creating opportunities for pairs to reflect in the present. She observed:

> I think maybe it's just that.... like what the interviews did for people- [These three or four days] just give them that time for reflection. You go again about your everyday life in your projects, and you don't really.... You might have had a difficult thing or whatever but you don't.... You know you go to the next day, and the next day and there are probably those moments to pause, structured, you have to come, to pause and they go, *Oh yeah that did happen to me* and you got that opportunity to put it together as a learning and reflect. That is probably how they interact. (Jean, Interview re: Preliminary Findings)

Through this theme, we note that some reflection did occur during the studentships and that additional insights about feelings and emotions during the studentships were gained as a result of the interviews and focus groups.

These four themes provide insight into what affective dimensions may be required for experiential learning about CBR to be transformative for students and beneficial for mentors and community partners.

DISCUSSION

Through this project, we seek to study critical reflection and critical dialogue about feelings and emotions regarding past experiential learning about CBR. By inviting students and mentors to participate in the project we have created a bit of time and space for them to reflect; many had not previously reflected on the feelings and/or emotions that arose during CBR Summer Studentships. In some cases, participants may have been unaware of student (and some mentor) development, let alone how they may have been changed by their individual and shared experiences. In this section, we will discuss insights regarding: (i) affect and relationships in experiential learning about CBR via the Science Shop, and (ii) the effects of inviting reflection about that experiential learning.

AFFECT AND RELATIONSHIPS IN EXPERIENTIAL LEARNING ABOUT CBR

Given that CBR is characterized by relationships, the Science-Shop students and mentors that we interviewed and engaged in focus groups discussed how relationships were a learning tool for them. In effect, this experiential learning occurred via people. Students did not retreat into their own office spaces to read and write about CBR. The studentships were about social interaction, responding to critical issues. Social interaction involved "emotional energy"; sometimes to interact with others required "energy" and other times, interaction gave "energy". The social interaction sometimes took the form of partnership as well as mentorship work. Given that students collaborated with partners as well as negotiated many "layers of mentorship", this experiential approach to learning about CBR was sometimes "overwhelming". These dynamics varied between easy and hard and so the experiential learning had both "highs" and "lows", like a "rollercoaster" or 'waves' or a "free-fall" with no sense of control. Some participants felt a sense of "flow" – because "when you are enjoying something it doesn't feel like work" (Shauna, student).

Through various opportunities in these dynamics, students had opportunities to develop "soft skills" (e.g., empathy) for relating to partners and mentors. CBR also requires awareness about one's own "personal stuff" and how it might play into CBR activities. To participate in the Science Shop required a certain degree of "maturity" to navigate the relationships, to appreciate multiple sources of expertise, and to grapple with the insight to 'let go' and move with a CBR process rather than resist or direct it. Learning how to give and take in mutually beneficial ways relative to others' needs and interests required not only thinking abilities but also feeling and emotional abilities. However, students and mentors may not all have articulated that insight during the studentships.

Experiential learning is characterized by a few dimensions: an intention to learn from direct experience, active involvement, some feedback mechanism, and reflection (Moon, 2004). Typically, the learning is unmediated, that is, not taught. Rather, students 'jump in' to experiences to try navigating the context with its various facilitating and constraining factors. A teacher or instructor may observe a student in action and be available for debriefing, but the students encounter dynamics directly. However, learning about CBR means that the content is relational and so the experience is relational and somewhat mediated. One student, Carla, described Alma and Jean, the staff, as "CBR mediators" – available to respond to "any sort of

Science-Shop questions" (Pair Interview). In CBR, participants are in interdependent relationships in a particular project/activity environment with various facilitating and constraining factors. In experiential learning about CBR, a student is encountering these social interactions as CBR, possibly for a first time. S/he may or may not have a mentor actively involved in the learning context and so debriefing may take various forms. The Science-Shop staff provide a debriefing type of group dynamic for the cohort of students, who also may serve as a peer type of support or mediation. In other words, although a 'teacher' is not mediating what a student learns, some indirect mediation may occur through the "layers of mentoring".

One particular layer of mentoring may be impacted by whether or not the university mentor is able to find a "fit" between what she is juggling in her academic context and her work with the Science-Shop student. If a fit does not occur, the mentor may not perceive much benefit from participating, feel stressed, and potentially "burn[s] out". Mentors may not have the "energy" to mentor and may lose "interest in helping" students. Finding a fit between student, mentor, community partner/project, and time available may be critical to facilitate experiential learning about CBR, in an academic context (e.g., a university).

The Science-Shop Research Coordinator, Alma, argues for a consistency between what is being taught with how it is taught. To this end, she strives to facilitate the three or four group days in an open-ended fashion, to follow the interests and needs of the students. Such an approach is relationally oriented and process-oriented and consistent with equitable, adult-learning principles (Vella, 2008). Yet, given that the mentors are juggling not only a process-oriented, CBR context with students but also a "traditional", academic context, mentors may require that students fit into their product-oriented research programs. Potentially, then, students may experience disconnect between the learning environment (Science-Shop community of practice) and the academic context in which mentors work. The mentors may embrace similar adult-learning principles; however, they must work within the hierarchical constraints of academia.

EFFECTS OF INVITING CRITICAL REFLECTION AND DIALOGUE ABOUT AFFECT

Recalling Heron (1992), to access what is being learned, we need to reflect actively (e.g., through journaling, through discussion). This requires considering not just whether theory matches or is different from practice but also feelings and emotional insights that arise (Moon, 2004). Critical self-reflection is not necessarily linear and something to be ticked off once from a to-do list; it can be learned, may be iterative, and may be helpful for maintaining an openness in experiential learning (Cranton & Carusetta, 2004, p. 289). If we discuss an experience with a critical lens (Cranton & Roy, 2003, p. 88), we explore how we have been changed by the experience. Then, we potentially act on what we have learned.

The pair interviews appeared to create space for student-mentor pairs to reflect in the context of existing, possibly on-going relationships (e.g., if the pair is also a graduate-supervision pair).The focus groups with just students and just mentors were spaces in which some people had not previously met while others did know each other. Yet, in each focus group, participants shared either a student orientation or a mentor orientation to in-depth experiential learning about CBR. In both the interviews and the focus groups, participants appeared to revisit critical moments from those experiences with some perspective of time. What might have hurt or frustrated

participants or elated them during the studentships may have been somewhat less intense by the time of interview and/or focus group.

During data collection, we invited participants to draw, sketch, and doodle as an option to support the critical reflection and dialogue. We recognized that expressing what they thought and felt might help to develop awareness of the feelings and emotions that arose during the experiential learning about CBR (Heron, 1992; Knill, Levine, & Levine, 2005; Yorks & Kasl, 2006). To varying degrees, participants did sketch; sometimes, they chose to describe images verbally in metaphor rather them draw them on paper. After drawing, participants interpreted their experiences through the art. Even participants who did not draw offered rich descriptions of imagery. Participants reported in a few instances that the opportunity to draw, in the context of the reflective dialogue, provided new insights and unanticipated emotions about the studentships. Although we cannot know in what ways such insights fit into individuals' transformative-learning trajectories, we perceive that participants were reflecting and making sense of what they experienced as they spoke and sketched.

Constructively expressing and reflecting upon feelings and emotions in experiential learning about CBR may prove beneficial over the long term for participants as practitioners of CBR. Through greater awareness of affect, they will have additional insights and skills about possible feelings and emotions that they may experience when collaborating with future CBR partners.

Looking through Heron's (1992) personhood lens, we suggest that this project created opportunities for participants to build on four ways of knowing: experiential, presentational, propositional, and practical. Having underlined experienced feelings and emotions (i.e., in an affective mode) (Heron, 1992), then underlined expressed them in word and image (i.e., imaginal mode), and underlined reflected on them (i.e., conceptual mode), participants offered thoughtful suggestions (i.e., underlined practical mode) for navigating experiential learning about CBR. For example: matching students' interests and needs with mentors' research programs and needs; identifying mutually beneficial CBR activities relative to community partners' interests and needs; extending studentships from four to eight months (not only to begin to build partnerships but also to collaborate and respond to critical issues).

RECOMMENDATIONS

We observe that the Science Shop is already creating not only cognitive but also affective space for learners to express their feelings and emotions from their various learning contexts. The Science Shop appears to appreciate how adults learn (i.e., that they are experts on their own lives, know what they wish to learn, can learn with peers). Staff recognize that if an adult learner feels heard, s/he may be more prepared to listen to the needs and interests of others (e.g., partners, mentors, student peers).

Critics might argue that experiential learning about CBR is costly in terms of time and money. Science-Shop staff describe feeling pressure to increase participant numbers. However, collaborative research like CBR is a necessary knowledge tool in global society. We are in a

moment in time in which complex issues (e.g., arising from globalization and environmental issues) must be addressed. To do so requires collaboration across not only research disciplines but also civil society, government, and academia (Brewer, 2013). Even as political-economic contexts and universities focus increasingly on what can be produced, collaboration requires understanding of 'process' – of relationships. For graduate students who are already being trained to create research products, creating opportunities for them also to learn about collaborative research processes would contribute to a growing, global effort to engage across sectors. Rather than expect academics and students to be either product or process-oriented, post-secondary institutions might consider providing resources to support on-going development of both orientations.

In this study, experiential learning about CBR occurs in various contexts with various facilitating and constraining factors. *We recommend that the Science Shop continue as a program, with a longer timeline (beyond the existing four-month structure).* We encourage the staff to continue to ensure time and space for reflective learning to help students not only experience but also express and reflect on the highs and lows and then to act – to be transformed as a result of the experience.

In addition to support for students, consider creating a second community of practice for mentors. They are necessary for this experiential learning about CBR. Yet, they may be isolated from other CBR practitioners on campus and may wish to have a mentors-only forum in which to express their feelings and emotions about CBR and mentoring experiential learning about CBR. Mentors are stretched as they juggle the Science Shop and other responsibilities. For mentors to participate, they may feel the need to fit students into their research programs, not necessarily seek a fit with students' interests. *For this reason, too, we recommend that more time be created for the CBR Summer Studentships to enable more student-mentor time and not only relationship building with partners but also collaborative responses to critical community issues.*

An objective of the research project is to apply the findings in the development and implementation of curricula about critical engagement including CBR (e.g., in the Faculty of Extension, in the Science Shop), in the practice of CBR, and in the growing scholarship about engagement. We hope that the results of this project will enhance understanding about the feelings and emotions involved in doing CBR. With this additional information, CBR partners may be better resourced when collaborating to effect social change and/or justice.

CONCLUSION

In community-based research (CBR), relationships are a medium of experience. Even though CBR practitioners are expected to relate well in the midst of partnership activities, understanding in peer-reviewed literature is limited regarding how to navigate potentially intense feelings and emotions when much may be at stake (e.g., critical issues, funding, time). To learn about CBR, immersion in collaborative relationships creates experiential learning opportunities. How do students navigate these relationships as learning tools, particularly the feelings and emotions that arise?

In this research project, Science-Shop participants were invited to reflect on past experiential learning about CBR, particularly feelings and emotions, through critical dialogue in student-mentor pairs, a group of students, and a group of mentors. As students, mentors, and staff in the Science Shop related, learning through "layers of mentorship" and relationships in CBR can be an intense experience, likened to a rollercoaster, waves, waterfall, and free-fall. A great deal of "emotional energy" may be required and potentially gained through collaboration. An openness to developing "soft skills" is helpful. Finding a "fit" is necessary between student interests and needs, mentor interests and needs, mutually beneficial CBR activities relative to community interests and needs, and time (i.e., more than the four months currently supported by the program). Creating time and space to express and reflect on feelings and emotions as an individual and/or with others involved in the CBR experience is critical for making the learning experience optimal.

We learned that, through the Science Shop, students enhanced their understanding about CBR. By inviting them to reflect on the feelings and emotions in their experiential learning about CBR, students described that they gained additional insights about what they felt during their studentships. Looking through Heron's (1992) personhood lens, this research project created opportunities for participants to build on four ways of knowing: experiential, presentational, propositional, and practical. Having experienced feelings and emotions (i.e., in an affective mode), then expressed them in word and image (i.e., imaginal mode), and reflected on them (i.e., conceptual mode), participants offered thoughtful suggestions (i.e., practical mode) for navigating experiential learning about CBR.

One of the potential outcomes of CBR is individual and/or social transformation – that individuals and groups not only are able to effect change of some sort but are also changed as a result of collaboration. With enhanced understanding through this project, we offer insights into designing and implementing experiential learning about CBR, a type of critical engagement. By extending the timeline (beyond the existing four-month structure) of the Science Shop, the additional time would be a resource for:

(i) *supporting the development of "fit" between students', mentors', and community partners' interests and needs;*
(ii) *collaborative responses to critical community issues; and*
(iii) *supporting student reflection on feelings and emotions that arise in experiential learning about CBR.* Developing reflective (or "propositional") skills amid the experience is a skill unto itself, worthy of curriculum support.

When "fit" occurs and reflection is encouraged, the Science Shop supports optimal, transformative experiential learning about CBR. The outcomes can be tremendous: graduate students attuned not only to product but also to process, through first-hand knowledge of relational skills.

LIMITATIONS

In this report, we present preliminary interpretations of the analysis. With additional time, potential exists for an in-depth, interpretive description of a focused ethnography about reflecting on feelings and emotions that arise among graduate students and university mentors in experiential learning about community-based research (CBR).

PRELIMINARY KNOWLEDGE MOBILIZATION

1) Presentation

Chapman, S. A. & Otto, W. (2014, June 5). *Reflecting on feelings and emotions in graduate, experiential learning about community-based research (CBR): An Introduction*. Staff-meeting presentation. Community-University Partnership for the Study of Children, Youth, and Families (CUP), Edmonton, AB: Authors.

2) Reflective-learning tool

A learning tool to support graduate-student reflection was created in response to a discussion about the findings, between Sherry Ann Chapman, Wesdyne Otto, and the Science-Shop staff:

Alvadj, T. (2014, June). *CBR (Science Shop): Multiple relationships taking place... with a student in the thick of it!* Tool for reflective learning. Science Shop for CBR Summer Studentships. WCHRI / CUP, Edmonton, AB: Author.

3) Technical Report

Chapman, S. A. & Otto, W. (2014, October). *Reflecting on feelings and emotions in graduate, experiential learning about community-based research (CBR): Technical report*. Faculty of Extension, University of Alberta, Edmonton: Authors.

4) Future knowledge mobilization

a) In August 2014, Sherry Ann discussed the technical report with the staff of the Science Shop. Potential exists to prepare resource materials for the staff as they consider the structure of the Science Shop in the future in the context of the partnership between WCHRI and CUP.

b) Potential exists to prepare a manuscript for publication in a peer-reviewed journal.

c) The project findings may also be of interest to the Faculty of Extension as plans are developed for future experiential learning opportunities regarding critical engagement (e.g., CBR) among graduate students.

REFERENCES

Brewer, J. D. (2013). *The public value of the social sciences: An interpretative essay*. London: Bloomsbury.

Cargo, M. & Mercer, S. L. (2008). The value and challenges of participatory research: Strengthening its practice. *Annual Review of Public Health, 29*, 325-350.

Conklin, H. G. (2008). Modeling compassion in critical, justice-oriented teacher education. *Harvard Educational Review, 78*(4), 652-674.

Cranton, P. & Carusetta, E. (2004). Developing authenticity as a transformative process. *Journal of Transformative Education, 2*, 276-293.

Cranton, P. & Roy, M. (2003). When the bottom falls out of the bucket: Toward a holistic perspective on transformative learning. *Journal of Transformative Education, 1*(2), 86-93.

Cunliffe, A. (2002). Reflexive dialogical practice in management learning. *Management Learning, 33*(1), 35-61.

Curato, N. (2012). Respondents as interlocutors: Translating deliberative democratic principles to qualitative interviewing ethics. *Qualitative Inquiry, 18*(7), 571-583. Retrieved http://qix.sagepub.com/content/18/7/571

Dirkx, J. M. (2008). The meaning and role of emotions in adult learning. *New Directions for Adult and Continuing Education, 120*, 7-18.

Fear, F. A., Rosaen, C. L., Bawden, R. J., & Foster-Fishman, P. G. (2006). *Coming to critical engagement: An autoethnographic exploration*. Edited by P. P. Miller. Foreword by J. S. Nielsen. Lanham, MD: University Press of America, Inc.

Gray, E., Mayan, M., Lo, S., Jhangri, G., & Wilson, D. (2012). A 4-year sequential assessment of the Families First Edmonton Partnership: Challenges to synergy in the implementation stage. *Health Promotion Practice, 13*, 272-278.

Guishard, M. (2009). *The false paths, the endless labors, the turns this way and that*: Participatory action research, mutual vulnerability, and the politics of inquiry. *Urban Review, 41*(1), 85-105.

Heron, J. (1992). *Feeling and personhood: Psychology in another key.* London: Sage.

Higginbottom, G. M. A., Pillay, J. J., & Boadu, N. Y. (2013). Guidance on performing focused ethnographies with an emphasis on healthcare research. *The Qualitative Report, 18*(Art. 17), 1-16. Retrieved http://www.nova.edu/ssss/QR/QR18/higginbottom17.pdf

Jørgensen, M. S. (2005). *An introduction to the concept of Science Shops and to the Science Shop at The Technical University of Denmark*. Unpublished paper. The Science Shop, c/o Department of Manufacturing Engineering and Management, Technical University of Denmark, Lyngby, Denmark.

Knill, P., Levine, E., & Levine, S. (2005). *Principles and practices of expressive arts therapy: Toward a therapeutic aesthetics.* London: Jessica Kingsley Publishers.

Knoblauch, H. (2005). Focused ethnography. *Forum: Qualitative Social Research, 6*(3), Article 44, 14 pages.

Moon, J. A. (2004). *A handbook of reflective and experiential learning*: *Theory and practice*. London: RoutledgeFalmer.

Pinnegar, S. & Hamilton, M.L. (2009). *Self-study of practice as a genre of qualitative research: Theory, methodology, and practice*. Self-Study of Teaching and Teacher Education Practices series. Volume 8. Series Editor: J. Loughran. New York: Springer.

Smith, P. & Bryan, K. (2005). Participatory evaluation: Navigating the emotions of partnerships. *Journal of Social Work Practice, 19*(2), 195-209.

Sontag, M. S., & Bubolz, M. M. (1988). A human ecological perspective for integration in home economics. In R. J. Borden & J. Jacobs (Eds.), *Human ecology: Research and applications* (pp. 117-128). College Park, MD: Society for Human Ecology.

Taylor, E. W. (2008). Transformative learning theory. *New Directions for Adult and Continuing Education, 119*, 5-15.

Thorne, S., Reimer Kirkham, S., & O'Flynn-Magee, K. (2004). The analytic challenge in interpretive description. *International Journal of Qualitative Methods, 3*(1), 1-11.

Vella, J. (2008). *On teaching and learning: Putting the principles and practices of dialogue education into action*. Foreword by J. Ashworth. San Francisco: Jossey-Bass.

Wallerstein, N. & Duran, B. (2008). The theoretical, historical, and practice roots of community based participatory research. In M. Minkler & N. Wallerstein (Eds.), *Community-based participatory research for health: From process to outcomes* (pp. 25-46). San Francisco, CA: John Wiley & Sons.

Ward, J. & Shortt, H. (2012). Evaluation in management education: A vision approach to drawing out emotion in student learning. *Management Learning 44*(5), 435-452.

Yorks, L. & Kasl, E. (2006). I know more than I can say: A taxonomy for using expressive ways of knowing to foster transformative learning. *Journal of Transformative Education, 4*(1), 43-64.