Supporting Post-Secondary Health Science Students with Atypical Trajectories: Lessons Learned From British Columbian Radiography Students Returning to Clinical Education After a Lapse of Time

by

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Abstract

Most academic programs experience attrition, and radiography is no exception. What happens when former students attempt to return to their hands-on studies after a lapse of time? There is a dearth of research examining the student experience of integrating back into a work-place educational environment after a lapse in their studies.

Medical Radiography Technology Diploma students in British Columbia who left their respective programs at some point and returned to a clinical practicum term after a lapse of time were invited to participate in a survey using a Likert scale and comment section to examine their experiences in multiple aspects. The three survey participants were also invited to participate in one-on-one narrative interviews; one chose to participate in an interview providing rich narrative data.

Sharing the realities of students who face the challenge of returning to clinical education after a lapse of time provides insights and lessons illuminating the needs of this under explored area of post-secondary student support.

Keywords: radiography; higher education; returning student; clinical education; student persistence

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I wish to extend my sincere appreciation to the students who participated in this study. I additionally wish to acknowledge the students I have had the privilege to work with during my career. Supporting students with atypical trajectories in this capacity is what inspired this research. The hard work and perseverance I have witnessed in my students, and in the resolute individuals who cooperated in this research is inspiring. I am honored that these individuals have shared their stories with me in the hopes of making the experience better for their peers in the future. I would also like to recognize Mira Rosche from CNC and Denise Poelzer from BCIT for sharing my research invitations to their students and graduates. Without their help this research would have been impossible.

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Glossary

Allied Health	There are varied and evolving definitions of this term (Lyons, Lecca & Valentine, 2003). In British Columbia and in this paper, Allied Health professions generally include hands-on medical professionals other than physicians and nurses. Many BC resources include medical imaging professionals, lab technologists, physiotherapists, occupational therapists, pharmacists, and respiratory therapists, among others, under this umbrella term (Vancouver Coastal Health; HealthMatch BC).
Clinical Education	Training taking place within the healthcare workplace (Lundvall, Dahlstrom & Dahlgren, 2021; Chamunyonga, 2020).
Health Sciences	There are varied definitions depending on context. In this paper, health sciences, refer to educational programs that are centered around the delivery of healthcare informed by science.
Remediation	The act of providing a remedy to a problem or a process to correct an academic fault or deficiency (Maize et al., 2010).
Stop-out	To temporarily withdraw from an educational institution (Tinto, 1994).
Student Attrition	Students leaving an educational program without completing the course of study (Adusei-Asante & Doh, 2016).

Introduction

Problem

Most academic programs experience attrition, and radiography is no exception. What happens when former students attempt to return to their hands-on studies after a lapse of time?

Inevitably all Medical Radiography Technology Diploma (MRAD) programs in British Columbia (BC) have had individuals that have started the program but have left at some point while maintaining their eligibility to return. Return to traditional lecture based on-campus academic terms is often addressed in larger institution policies providing a clear pathway. However, the BC MRAD programs alternate academic terms with clinical education terms at hospitals throughout the province's health authorities. Each course is only offered once per year and is only open to the individuals registered in the MRAD program, with seats limited by the number of available clinical practicum sites accessible to the program. Given the required courses of the program run in consecutive sequence, a student will have an unavoidable lapse of time prior to returning, generally eight months or greater. This lapse of time has the potential for significant degradation of knowledge and skills. It is imperative that students returning to the hospital are adequately prepared and assessed prior to entering a clinical course, for the following reasons:

- The individual needs to be competent and confident to enter the hospital medical imaging department and conduct themselves in an appropriate and safe manner. This is integral to their mental and physical wellbeing, as well as that of their patients.

- Supporting students to perform safely in the clinical environment is integral to the MRAD program's ability to meet their accreditation requirements as outlined by their governing body, the Canadian Association of Medical Radiation Technologists (CAMRT) and Health Standards Organization (HSO) Accreditation Canada program.

- The clinical partners that work with these educational institutions have an expectation that the students they are receiving are deemed competent to operate safely at their given stage of the program. Clinical partners are not prepared to administer remediation training on-site.

Students returning to the program after a lapse of time represent a small proportion of the student population, and because their exit and return are atypical, they often do not conform to existing institutional policies related to re-admission to post-secondary education. Although they account for a small proportion of the student body, the information they can offer is valuable. The radiography profession is in demand, as are many other health science professions. This demand illustrates how valuable all potential graduates are to the communities in which they may eventually work. Additionally, the lessons we can learn from these individuals will hopefully transcend the small radiography community and provide insight into how we can support other students returning to hands-on educational settings after a lapse of time. Educators have an obligation to support their students to achieve their goals in the classroom, but also in off-site practicum settings. This obligation should not be abandoned when students experience atypical trajectories. Supporting individuals to return to their educational journeys after an absence due to pregnancy, illness, or any myriad of reasons should be important to post-secondary institutions.

Literature review

In his book, *Leaving College*, sociology professor Vincent Tinto (1994) introduced a detailed longitudinal model linking student retention to the holistic educational environment rather than solely focusing on student shortcomings as causative factors for attrition. In this model persistence occurs when students persevere in their academic endeavors. The term "persisters" is used to describe students still enrolled with continuous attendance beyond the four years expected to obtain a degree or who re-enrolled after leaving for a time (Tinto, 1994).

In his works, professor of higher education, John Braxton (2014) highlights the importance of maintaining a distinction between retention and persistence. He quotes higher education professor Linda Hagedorn, “institutions retain students and students persist” (as cited in Braxton et al., 2014, p.6). Tinto’s Interactionalist Theory of Student Departure formed the framework for our understanding of student retention (Braxton et al., 2014). However, student retention theories and models continue to evolve with our changing society and advancing knowledge. Scholars such as Braxton (2014) have questioned the validity of Tinto’s model, calling for empirical testing of multiple theories that consider different educational contexts and structural constraints. Braxton (2014) has explored varying models for commuter institutions versus residential institutions. Perhaps a further segmentation of retention theory to explore persistence in academic classroom settings versus hands-on educational environments might prove fruitful.

In his model, Tinto (1994) implores institutions to commit to the education of all, not just some, of their students. This commitment must extend to those attempting to re-integrate into post-secondary institutions after a time lapse in their studies. Tinto (1994) refers to these students who temporarily withdraw from their studies as "stop-outs". Retention models generally speak to keeping students continuously enrolled, avoiding departures. While stop-outs are defined in Tinto's model, their re-integration back into the institution are not a focus of his model. He suggests active strategies such as sending newsletters to all stop-outs in good academic standing and creating special supports that

ensure access and equivalent forms of institutional services (1994, p.178-179). This advice is relegated to less than two pages of the book *Leaving College*.

In his article, "Research and Practice of Student Retention: What Next?" he asks those in higher education to consider what issues remain to be explored relating to the problem of student attrition (Tinto, 2006). I hope to explore a niche area of student persistence, integrating stop-outs back into hands-on education effectively. Although this is a facet of student persistence, I am narrowing my research to the specific transition back into clinical training after a lapse of time. Although no direct topic matches were found, searches unearthed literature touching on some inter-related topics such as "health science" "education attrition and retention", "health science" and "radiography" "clinical education" demands, and "health science" "professional re-training". This existing literature highlights the significant attrition that exists in health science programs and explores the impact of attrition. Additionally, the challenges students face in hands-on clinical environments is examined, calling attention to the unique demands of learning in a working hospital.

Attrition

As educator Carol Gillis (2007) found in her exploration of health science attrition at Dalhousie University in Halifax, there is limited literature available regarding health science attrition. I have found in my search that this deficit persists. Of the available literature, there is a significant focus on physician and nursing education with scarce reference to allied health. Additionally, many of the found studies were generated outside of Canada and/or not recent. A 2019 United Kingdom (UK) study reported radiographer attrition at 14%, 6% higher than the UK national average for higher education (McAnulla, Ball, & Knapp, 2019). As per data collected by the American Medical Association (AMA) there was a 14% attrition rate in accredited American radiographic sciences programs between 1989-1990 (Gupta, 1990). Despite best attempts to find current AMA data on radiographic science attrition, no statistics were found in publicly available databases. A look at an individual radiography program in Oklahoma, USA between the 1997/1998 and 2002/2003 academic years demonstrated substantial

fluctuating attrition at 32% (97/98), 52% (99/00), 45.5% (00/01), 16.7% (01/02) and 21% (02/03) (Ozor, 2003). In the Oklahoma study, each year's attrition was broken down into three causative categories: academic, clinical, or personal/other. The percentage of attrition attributed to each category varied from year to year with no consistent trend. From my own anecdotal experience as a radiography educator over the last 10 years, attrition is a significant issue and remains higher in allied health than in other programs at my institution.

There has been some research into the reasons students depart from post-secondary health science education. Academic issues, which are prevalent reasons in many educational sectors, such as dissatisfaction with the program, course failure, and academic dishonesty have been identified (Blume & Krefetz, 1997; Gillis, 2017; Stewart, 1990). Additional factors such as feelings of having chosen the wrong career path, personal challenges like health issues, ending of romantic relationships, deaths of loved ones, commute and pregnancies have also been identified (Blume & Krefetz, 1997; Kanji, 2018; Ozor, 2003). More specific to health care professional designation training is the stress associated with the profession (Stewart, 1990). In her discussion of attrition from Canadian university health profession schools, nurse educator Miriam Stewart (1990) suggested motivation and commitment variables influence allied health program attrition more significantly than academic ability or social/academic integration factors. As students embark on the clinical aspects of their training, they experience first-hand the professional role, working as part of the larger health care team. This work can sometimes reveal an unrealistic expectation a student may hold about the job, and unearth unsuitability (Stewart, 1990).

Impacts of Attrition

Losing students from health care education programs can have an impact on all stakeholders, from the student to the general population. For the student there is the potential for the accruement of costly student loans, with no qualification gained (Gillis, 2007; Maize et al., 2010). For educational institutions, as student seats are vacated, they often remain vacant for the duration of the program resulting in expenditure of resources

with no tuition gained (Stewart, 1990; Gillis, 2017). These vacancies can impact governmental funding and have far reaching budget implications (Braxton et al., 2014). Attrition can negatively impact stability of institutional enrollment by creating a negative public perception about the quality of the institution (Braxton et al., 2014). For the general population, students who graduate from health care programs bring that knowledge back to our communities to meet the expansive demand for health care professionals (Stewart, 1990).

In Canada during the global pandemic job vacancies in health care occupations were highlighted. Fourth quarter reports from 2020 showed an increase in 28,000 health care job vacancies across Canada (Statistics Canada, 2021). While the Canadian Government has no publicly available statistics on radiography vacancies, they do publish prospects for the profession which consider employment growth, anticipated retirements, and unemployment rates. Current radiography prospects in BC are good, the highest rating, and have remained at that level for many years (Government of Canada, 2021). Doctor of pharmacology/toxicology, David F. Maize (2010), and his colleagues reviewed remediation programs in their field and other health professions. This analysis suggested individuals from underrepresented groups disproportionately experience attrition subsequently creating a health care system where providers are not representative of the populations they serve (Maize et al., 2010). This underrepresentation among those administering services perpetuates economic and health disparities in the community (Maize et al., 2010).

Challenges of Returning to Clinical Education

There has been an ongoing discussion, especially in nursing education, about the theory-practice gap. This is defined as a gap between theoretical knowledge and the practical application of knowledge (Allmark, 1995; Greenway, Butt, & Walthall, 2019). As nurse educator Peter Allmark (1995) pointed out in his discussion of the theory-practice gap in his field, certain knowledge related to practice can only be acquired by doing, as in learning to ride a bike. Clinical education provides authentic and relevant knowledge. This authenticity brings about a host of potential challenges and stressors for

health science students. The high stakes nature of working with real patients in the hospital setting can induce a fear of making mistakes (Chamunyonga, 2020). This fear and the emotional toll of adverse patient outcomes such as death can precipitate a host of mental health issues such as anxiety (Chamunyonga, 2020). This pressure cooker environment can also leave students vulnerable to bullying and harassment (Chamunyonga, 2020). The full-time work week compounded with the mental demands of continual learning can lead to exhaustion and poor self-care (Chamunyonga, 2020). In qualitative studies of student perceptions about training within the clinical environment there have been reports of anxiety, fears of making a mistake, feeling inadequate and intimidated, and feelings of unease when confronted with difficult patients or complex situations (Mason, 2006; Shahsavari et al., 2017). These observations would suggest that individuals being re-integrated into clinical education would require unique supports that may differ from those offered to students returning to classroom education.

Many professional bodies have recognized the importance of supporting individuals returning to professional practice after an absence. There is literature discussing the necessity of meeting this need regarding UK Physicians (Mullender et al., 2020), American Army pediatricians (Braun, Sawyer, Kavanagh, & Deering, 2014), Australian and American nurses and midwives (McMurtrie, Cameron, OLuanaigh, & Osborne, 2013; Alexander, 2013), and American Anesthesiologists (Green, Iqbal, Hoffman, Green, & Varjavand, 2019). A common theme among these studies is the perceived or stated requirement of appropriate retraining and testing for individuals returning to practice after a lapse of time, and the lack of existing supports. Nearly all the listed professional studies documented piloting a refresher course or similar program. While I was able to find these examples of professional bodies exploring the educational needs of their members returning to the clinical environment after a lapse of time, there were significantly less studies regarding students.

In Iran, nursing professor Hooman Shahsavari and his colleagues (2016) created and trialed a clinical refresher course for final year nursing students of an undergraduate program prior to entering their final internship. This study found that students who participated in the refresher course experienced higher levels of clinical self-efficacy,

lower anxiety, and better clinical skills (Shahsavari et al., 2016). While this research suggests refresher courses prior to entering clinical education have merit, this course was integrated in line with the program trajectory and participants had not experienced a lapse of time in their educational journeys. In the United States Dr. David F. Maize (2010) and his colleagues explored remediation programs in pharmacy education. Again, this study does not look at individuals returning after a lapse of time, but rather those not meeting educational requirements and needing supports. In their discussion of clinical practice issues, they note that issues may go unnoticed in the practice setting given students are doing rotations with clinicians who are not trained teachers and lack the resources to provide remediation (Maize et al., 2010). This environment can lead to students graduating without the skills they need to be safe practitioners, subsequently causing costly professional mistakes (Maize et al., 2010). Discussed remediation tools included course repetition or the development of individualized plans which could include summer restudy programs, reduced course loads, clinical observation and feedback or review sessions among other suggestions. They concluded that rigorous admissions standards, academic assistance programs, and aggressive early detection policies can reduce the need for remediation. This study also acknowledges the lack of attention to this topic in the research (Maize et al., 2010).

Conclusion

In reviewing the available literature, attrition in health science educational programs is a significant issue. Several sources noted attrition in health sciences was higher than in other areas of study. However, there was an apparent lack of attention in the literature to the attrition in allied health sectors. Attrition is not only detrimental to the individual and educational organization but to the larger community. Health professionals are in demand, and a robust and representative work force is mandatory to best meet community needs. Re-integrating interested individuals who have left educational settings back into their programs of study serves all stakeholders.

In addition to traditional classroom based educational delivery, health sciences education includes hands-on practical training in the clinical environment. The clinical

environment can be an intimidating, high-stakes, and fast-paced setting for learners. The inherent stress and real-world consequences of clinical learning must be considered. There was no available literature on re-integrating students into the clinical setting after a lapse of time. However, a research study was identified that showed even in line with regular program delivery, clinical refresher training showed a positive affect on student experiences in the hospital setting (Shahsavari et al., 2016). Many health science professional bodies also identified the need for resources to refresh individuals returning to clinical practice after a lapse of time (Alexander, 2013; Braun, Sawyer, Kavanagh, & Deering, 2014; Green, Iqbal, Hoffman, Green, & Varjavand, 2019; Maize et al., 2010; McMurtrie, Cameron, OLuanaigh, & Osborne, 2013; Mullender et al., 2020).

My research endeavored to take the first step in exploring re-integration of students into the clinical setting after a lapse of time by looking at the narrative experiences of individuals who experienced that trajectory.

Research approach

Researcher Subjectivity

My career as a radiographer took me to many hospitals throughout the province of BC, working in multiple health authorities. I eventually returned to my hometown in Northern BC and pursued a teaching position within the Medical Radiography Technology program at the College of New Caledonia in 2011. In my time as a radiography educator, I have personally worked with several students who left their studies, whether due to pregnancy, health struggles, or academic issues among others. The first time was in my second-year teaching, I was tasked with providing remediation and assessment for a student who was returning to hands on clinical practicum education after a year away. This individual's return was atypical in that they were returning to a hospital learning environment after a year away from their studies. Existing policies were geared towards return to on-campus academic studies and did not recognize the increased stakes inherent in learning with real patients.

Given the lack of policy or procedure, I referenced the CAMRT competency profile to create a matrix of the skills necessary for safe practice in the term to which they were returning. The student and I met for regular remediation sessions on campus using that matrix as a guide. Prior to them being allowed to register in their desired clinical course, they were asked to undergo an imaging role play assessment familiar to them from their previous on campus terms. This process was an ad hoc response to the situation at hand. The work was done on the side of my desk and in informal consultation with my administrators. This experience informed how I supported future students in similar situations, but policy at my institution did not catch up until 2021. Having experienced significant loss and trauma in my own personal life, I understand how situations outside of one's control can impact our desired trajectories. As such, I would like to learn more about the experiences of my students who have faced their own unique challenges so that I may apply lessons learned to better support students who experience "bumps in the road."

Research Purpose and Questions

With this study I hoped to answer the question, "What are the experiences of radiography students attempting to return to clinical education terms after a lapse of time?" For the broad sample, I specifically wanted to gauge their level of satisfaction using a Likert scale, regarding:

- Their experience with both the post-secondary institution and the program.
- The refresher training provided to them if applicable.
- Their level of preparedness in a list of specific topics.

Additionally, I wanted to gain a more nuanced perspective of the broader data through a small number of one-on-one interviews, eliciting narrative examples to understand:

- Their experiences during their initial exit from the program.
- Their experiences upon returning to the program.
- Their preparation to return to the clinical environment.
- Their experiences upon return to the clinical environment.

Methodology

To explore the experiences of individuals who returned to clinical education after a lapse of time, I chose a mixed method, explanatory sequential, research design (Creswell, 2012). I collected quantitative data through an anonymized online survey using SurveyMonkey®. The intention behind administering a survey was to create an easy, anonymized pathway for participants to share their experiences. While I hoped to gain a richer narrative perspective through interviews, I realized that the intimacy of sharing personal experiences with a stranger may limit the number of participants willing to partake in a semi-structured one-on-one interview. My hope was that providing a hyperlinked survey that participants could complete immediately and privately would promote greater participation. Although the anticipated sample size for this study would

not meet the threshold of thirty respondents identified by O'Leary (2013) as the mandatory minimum for statistical analysis, using quantitative data can provide a footing of objective information to ground the secondary qualitative interviews.

I estimated the survey would take approximately 20 minutes to complete. It used a Likert scale to gauge students' experiences with multiple aspects of their return and a free text comment box beneath each question. SurveyMonkey® is a US company, as such, data participants provided could be transmitted and stored in countries outside of Canada, as well as in Canada. Privacy laws vary in different countries and may not be the same as in Canada. Participants were informed of these data storage implications in the survey participant consent form (see Appendix C).

After completing the survey, participants were asked if they would be willing to participate in a secondary qualitative data collection via one-on-one interview. Given most anticipated participants were located outside of the researcher's home base, the interview was offered via Zoom® or telephone as per the respondent's preference. The interview was arranged at a mutually agreeable time and took approximately 45-60 minutes. The participant was provided with a detailed consent form for them to review and sign prior to the interview (see Appendix D). The questions of the interview focused on more nuanced information about participants experiences such as mitigating factors that precipitated their initial exit from the program.

Inclusion Parameters

Inclusion parameters for participation in this research were:

a) Current or former students of one of the three Medical Radiography Technology programs in British Columbia -that-

b) left their respective radiography programs at some point while maintaining their eligibility to return -and-

c) returned to a clinical practicum term after a lapse of time.

To ensure current narratives I looked back five years (2016 intake -to- 2021 cohort)

There are three institutions that offer a Medical Radiography Technology Diploma designation in BC. The British Columbia Institute of Technology (BCIT) has been offering the program since 1964 with fluctuating intake over the years, but eighty students in 2020. The College of New Caledonia (CNC) in Prince George offered its first intake of sixteen students in 2011. Camosun College in Victoria offered its first intake of students in 2012, and prior to the Covid-19 pandemic had an intake of sixteen students.

At the inception of the radiography programs at CNC and Camosun, there were memorandums of understanding put in place providing for a shared provincial curriculum. Although each program has evolved, they maintain a similar structure and adherence to the Canadian Association of Medical Radiation Technologists (CAMRT) curriculum guidelines. In personally sharing my own challenges as a faculty attempting to best meet the needs of students returning after a lapse of time at collaborative meetings between the institutions, conversation indicated a shared concern among all three programs. Given the presumably small number of individuals that meet these criteria, the province wide recruitment increases the potential sample pool. Including students from all three institutions additionally provides more inclusive and therefore translatable lessons.

Population and Recruitment

Given privacy issues, I was unable to independently obtain specific data on the number of individuals who met the study's inclusion criteria prior to beginning my research. Based on my own work at CNC I calculated that approximately 2.5% of the student body I have taught have left the program at some point and returned to clinical education after a time lapse. Using this anecdotal calculation and the institutions intakes noted above I anticipated that if I reached out to the cohorts of all three institutions, going back five years, there are potentially fourteen individuals meeting the inclusion criteria.

Upon obtaining approval from both the Harmonized Ethics Review Board and the CNC Research Ethics Board, I approached the faculty member leading each MRAD Program. Each institution has a different title for that role, Program Coordinator at CNC, Program Head at BCIT and Program Leader at Camosun. I requested their help with recruitment (See Appendix A). All three institution contacts agreed to help in the identification and recruitment of participants (i.e., third-party recruiters).

I asked that they distribute an email broadcast to all former and current students (2016 intake -to- current cohort) of their respective programs allowing students to self-identify based on inclusion parameters. Alternatively, should this provide challenges for the coordinators, I also outlined the inclusion parameters in my request and suggested that they may send it to all applicable candidates directly. Based on my own experiences as a radiography instructor, I anticipated that the two smaller institutions each would have less than five individuals meeting the inclusion criteria.

The Program Leader at Camosun shared that all students in the 2018 and 2019 intake cohorts experienced a temporary suspension of their clinical studies during the pandemic. Based on expected intake this is likely thirty-two students or less, dependent on attrition. These groups experienced a lapse of time away from the clinical environment but were supported as a cohort under the guidance of their institution and program. Exploring these students' experiences may provide insights for future research, however, their trajectory is significantly different from the ad hoc returns I hope to study here. There were no individual students meeting the inclusion criteria for this study from the 2016 to 2021 intakes. Whereas the CNC Program Coordinator and BCIT Program Head both identified individuals from their respective programs that met the inclusion criteria.

I collaborated with the CNC Program Coordinator and BCIT Program Head to determine a recruitment time frame that was most convenient for them to aide in their voluntary support as third-party recruiters. I provided each with the letter of invitation (see Appendix B) for them to disseminate during the agreed upon time frame. The CNC Program Coordinator graciously forwarded the email to seven individuals. The BCIT Program Head graciously forwarded the email to twelve individuals. Through these

consultations, a total population of 19 individuals who met the inclusion criteria of the study were contacted (N=19).

The consent form (see Appendix C) was embedded within the first page of the survey with the invitation to participate in a one-on-one interview on the concluding page of the survey. Participants choosing to partake in the interview could include their contact information on this page. This final page was segmented from the rest of the survey results, to ensure there was no linkage between the survey and the individuals name and identifying information. Upon receipt of their contact information, I reached out and included the interview consent (see Appendix D) and questions (see Appendix F) for them to review. Additionally, I hoped to implement the snowball approach, asking participants to share the study with other individuals they may know who fit the inclusion parameters.

Data Collection and Analysis

A total of three respondents completed the survey. The lapse of time each was away from the program varied; 1 year, 19 months, and 2 years. All respondents stated that they were subsequently successful in the course they returned to. Given n=3, statistical analysis was not undertaken. Likert responses were summarized in Figures 1 through 4, and comment data was reviewed for narrative context related to the four aspects explored: experiences with the post-secondary institution, the program, refresher training provided (if applicable), and feelings of clinical readiness in multiple domains.

One respondent agreed to partake in a one-on-one interview. I reached out to that individual and was able to have a conversation by telephone. The respondent agreed to have the interview recorded which I then transcribed. The participant was asked if they would like the opportunity to review the transcript to clarify and make any changes. They subsequently declined to review the transcript but asked to be sent a copy of the completed research report. I reviewed the transcript line by line for emergent lessons within the four aspects explored.

Limitations

Given the limited sample there is no guarantee that the results garnered are representative of the larger population. The hope with this study is that through the openness of willing volunteers we can gain an insight into the realities of students who face the challenge of returning to clinical education after a lapse of time. Hopefully, these insights can provide lessons that can illuminate the needs of this under explored area of post-secondary student support. It is also important to acknowledge that this research study was conducted during the COVID-19 global pandemic and certainly, the pressures on the health care system and professionals may have also influenced individuals' willingness to participate.

Ethical Considerations

Ethics approval was obtained via the CNC Research Ethics Board and the Harmonized Ethics Review Board which encompasses SFU, BCIT and Camosun. There were no foreseeable risks to participating in this study outside of those encountered in everyday life. Stress involved in participating would be no more than the stress participants encounter in daily work. Some of the questions asked may have seemed sensitive or personal but participants were informed in the invitation, and again at the outset of the survey and interview that they did not have to answer any question if they did not want to. Participants may have had concerns regarding the researchers position as a radiography educator at the College of New Caledonia. Within both the survey and interview consent to participate (Appendices C & D) it was clarified that participation was voluntary and no adverse consequences would be incurred if participants chose to participate or not to participate. Additionally, it was stated that not participating or withdrawing would not affect their grades in any course or the services that they received as part of their program. Participation in this study was not contingent on completing both components, and participants were welcome to participate in the anonymous online survey alone if preferred. Participants were clearly informed that they could decide to stop participating at any point of the process, for any reason. However, participants

would not be able to withdraw from the survey after it was submitted, as the researcher would not know who they are.

Student Experiences

Post-Secondary Institution

Student experiences in four aspects were explored; experiences with the post-secondary institution, the program, refresher training provided (if applicable) and feelings of clinical readiness in multiple domains. Responses for each aspect were summarized separately. Within each section the summaries were reviewed for subthemes. The first aspect explored on the survey was the returning student's experience with the post secondary institution. Table 1 shows Likert survey responses regarding student's experiences with the post-secondary institution. Responses showed a predominantly positive or neutral experience. However, when asked if the post-secondary institution clearly defined the steps required to return to the program one respondent commented "The steps required to return to the program were clearly defined however, not necessarily easy to access or upfront. It wasn't until I discussed my return with [program and institutional staff] and had their approval to return to the program that I was given the requirements to return" (Survey participant 2). Further research into existence of and access to institutional policy regarding re-admission to hands-on education may provide further context for this comment.

Table 1

Survey responses regarding experiences with the post-secondary institution

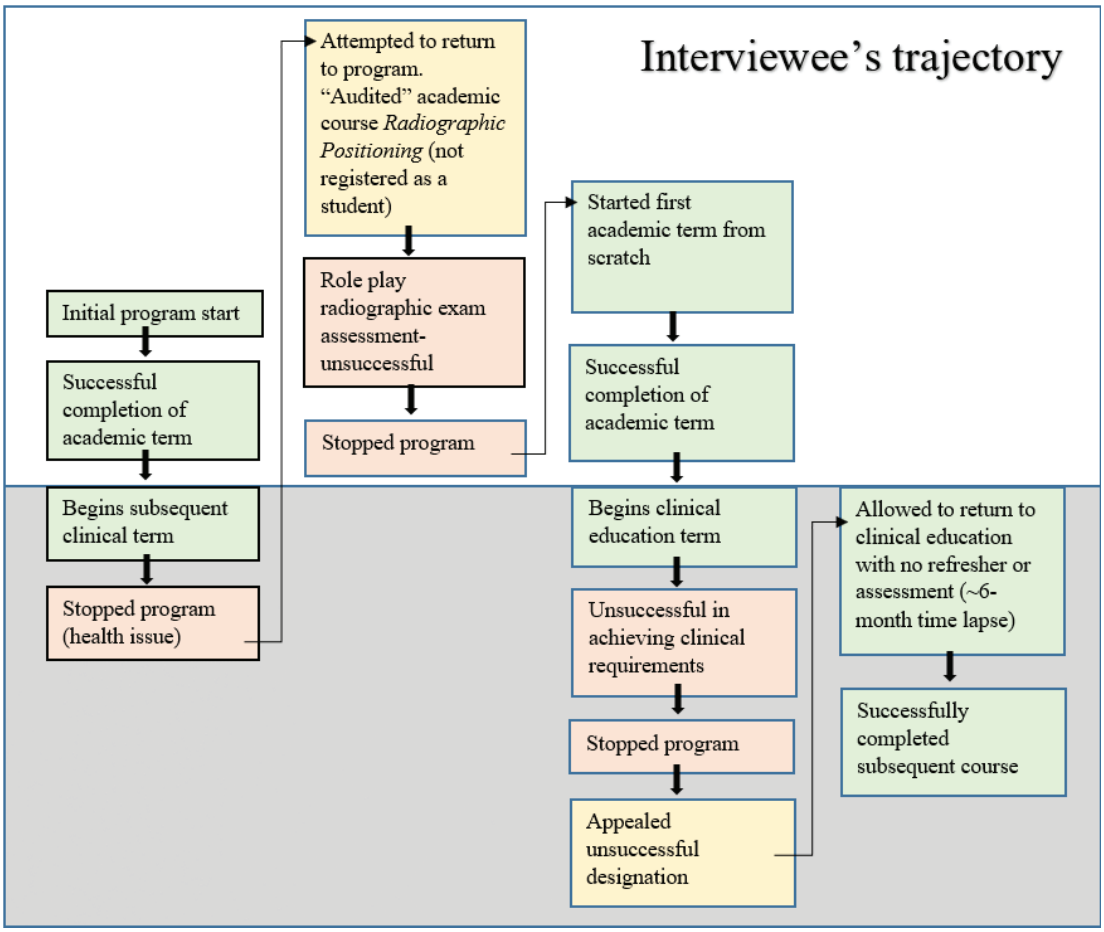
Question	Agree -or- Strongly agree	Neutral	Disagree -or- Strongly disagree
The post-secondary institution supported my return to the program	2	1	
The post-secondary institution clearly defined the steps required to return to the program.	2	1	
My inquiries to the post-secondary institution were answered in a timely fashion	3		

The fees associated with my return were reasonable.	2	1	
I felt like the post-secondary institution valued me as an individual.	2		1

One respondent noted they did not feel valued by the organization and provided comments for context. They shared that they had objectionable interactions with a specific administrator that left a lasting negative impression. Their comment exemplifies the impact a single individual can have on a student's experience. They continued, "However, this was not specific to my leaving and returning to the program but in all aspects" (Survey participant 2).

The narrative interview unearthed a rich experience with varied paths (as mapped out in the below Figure 1). Due to a persistent health issue, the individual left the program and subsequently returned after a time-lapse multiple times. Each time a different process was implemented. After their initial departure due to health issues, the interviewee attempted to return to clinical education and was unsuccessful in the preceding assessment and therefore stopped in the program again. They subsequently repeated the first-year academic studies successfully and returned to clinical education. They were unsuccessful in meeting clinical requirements and were stopped in the program. This stoppage was appealed, and they were allowed to repeat the clinical education course during the next available offering approximately six months later. They were subsequently successful in the clinical education course.

Figure 1 Individual Trajectory of Persistence



As figure 1 demonstrates, initially, the individual left a clinical education term due to health issues. When asked who they contacted once they decided to return, they stated they spoke directly to program staff and it was in consultation with those staff members that requirements were discussed. They noted there was initially little interaction with the post-secondary institution and that most discussions were undertaken directly with faculty. They were allowed to return to the program the following year, being given the opportunity to audit the prefacing academic radiographic positioning course free of charge. At the end of the academic term, prior to returning to the clinical setting, they were required to complete a role play evaluation of their clinical skills, familiar to them from previous academic terms. Although this route was free to the student the supports received reflected that. They shared, "I wasn't officially a student at

that point anymore, so it was the freedom to audit that really didn't have a guideline or anything that was officially needed." When asked if they utilized college supports like counselling or advising during this return, they expressed that at this stage of their journey they were unaware of the resources available. They stated, "maybe it wasn't available to me auditing it because I wasn't paying the fees for the schooling… I don't know if I could have still accessed stuff like that". Due to the developing nature of their health issue, they were also unaware of their own needs as they learned to cope with their new reality.

After an unsuccessful evaluation at the end of the audit process they were stopped in the program and invited to start term one from scratch with the subsequent intake of students. Due to the multiple pathways they experienced and the passage of time some details were difficult for them to recall. They were unsure if they accessed institutional supports in this pathway. During this return they attempted to assimilate into the new cohort of students and conveyed a desire to avoid drawing attention to the fact they were a returning student. They expressed an aversion to anything that would indicate they were not a "first timer like everyone else". They were successful in this academic term and progressed to the subsequent clinical education term.

Unfortunately, the health issues continued to impact their trajectory and they were unsuccessful in achieving the total number of required clinical evaluations and were stopped in the program. They chose to appeal their removal through the institutions appeal process. It was through this process that they were given more information about the institutional support systems. They shared, "I actually did appeal though, not passing level 2, so I was put in contact with someone from the school itself, not from the program, that was there to help me appeal the case and I think from there it was decided that I could repeat level 2. That was when I was given more of the resources". They expressed that the appeal process was expedient and easy to navigate. Through this process they were put in contact with accessibility services which provided disability support. They found these services helpful and conveyed a hope that mechanisms could be put in place to make students in their position aware of these services sooner in their journeys.

The Radiography Program

The second aspect explored on the survey was the returning students experience with the medical radiography program. Table 2 shows Likert survey responses regarding student's experiences with the program. Responses show an overall positive experience with the MRAD program. When asked if the radiography program faculty supported the students return to the program, one respondent commented "The radiography program staff have always been rather supportive and caring. Many of them were willing to devote their time and assistance to support me in returning to the program" (Survey participant 2).

Table 2

Survey responses regarding experiences with the program

Question	Agree -or- Strongly agree	Neutral	Disagree -or- Strongly disagree
The radiography program faculty supported my return to the program	3		
The radiography program faculty clearly defined the steps required to return to the program	2	1	
The radiography program responded to my inquiries in a timely fashion.	3		
I felt like the radiography program faculty valued me as an individual.	3		

The interviewee expressed an overall positive regard for the program. Throughout each pathway program faculty appeared to be the main point of contact. Although, they described navigating each return with minimal overarching guidance. During both the audit process and subsequent repetition of term one academic courses they shared that they did not approach their instructors for extra assistance or support. They voiced a feeling that the opportunity to engage was available but that they didn't take advantage of

it. Perhaps if faculty initiated one-on-one check-ins with struggling students, it could open the door to allow better utilization of faculty supports in the future.

Refresher Training

The third aspect explored on the survey was the refresher process the student experienced before returning to the clinical environment. Two of the three respondents indicated they participated in a refresher process. Table 3 shows Likert survey responses regarding student's experiences with refresher training. Responses show both individuals shared positive experiences with refresher training provided, with one stating, "It felt fair in the sense that all of the consolidation labs that the students do throughout their learning I had to redo to prove my competency" (Survey participant 2). When asked about their preparedness in specific realms of clinical literacy both selected "Agree" or "Strongly agree" in relation to all questions. However, in their comments related to readiness to obtain radiographs, one respondent shared that they felt "Somewhat prepared as I had my previous experiences in clinicals however there was a year gap between last being in a clinical setting which made me feel unprepared compared to the rest of the students in my cohort" (Survey participant 2). This comment may be contextualized further by expanding on the policy review suggested above. Analyzing existing policy and researching student, faculty, and clinical staff's experiences regarding its efficacy in in preparing students in multiple domains may identify strengths and weaknesses in current processes.

Table 3

Survey responses regarding experiences with refresher training

Question	Agree -or- Strongly agree	Neutral	Disagree -or- Strongly disagree
The refresher process that I participated in was fair.	2		
The refresher process I participated in allowed me adequate access to the on-campus lab to ensure I could practice my skills.	2		

The refresher process that I participated in allowed ample opportunity for me to ask questions.	2		

The interviewee had the unique vantage point of being able to compare different refresher training models. When describing their first return experience where they audited one course prior to a positioning evaluation they noted that it was free, and their experience reflected that. They shared that they were "allowed to come to the lectures and sit in and take notes . . . I was allowed to access the labs after hours to practice". However, no other remediation was explicitly offered, with them stating "maybe I could have reached out and found more options but at the time that was kind of all I knew of." More than once they noted that during this process they were not registered as a student and as such felt they were not able to access services. Although they were unsuccessful in the evaluation at the end of the audit process, they appeared comfortable with the role play model familiar to them from the academic term.

During their second return, when they repeated all term one academic courses, they appeared to have a more positive experience. This may have been in part due to the stronger social connections afforded by being part of a cohort. They communicated that the ability to pretend it was their first time and assimilate into the group improved their confidence. When comparing their three return routes, they expressed that this was the only one where they didn't feel like an outcast. When asked if they felt prepared to return to the clinical environment they said, "yes, because again I had to repeat level one, so I was just like all the other students and . . . I just pretended like I was a brand-new student and doing it for the first time like everyone else, so that part felt quite normal."

For their final return to the program after appeal, no remediation was offered. They estimated there was a six-month lapse in their studies from the time they left the clinical environment until they returned. They shared that in this pathway they did not take on any self-directed studies. They shared, "so not knowing the fellow students I'm going to be meeting and then not meeting that many because it was just me and one other at the hospital, and then kind of out of the flow, that time I didn't audit so it was basically

from May [to] January, of the next year of no studies whatsoever". They indicated that this lapse of time led to difficulties re-integrating into the clinical setting. Specifically, radiographic image analysis was highlighted as an area of difficulty. However, in terms of caring for their patients, the personal health journey they had experienced left them feeling confident in their bedside manner and ability to provide safe care. They disclosed, "I think because of what I've been through, usually my patient care is what I do best."

Given the interviewee was able to personally compare multiple return pathways they have a rare and valuable perspective. Through this comparison they highlighted the importance of being a registered student to allow for full access to all institution supports. They also shared the positive impact of being able to integrate into a cohort of their peers. Juxtaposing the final pathway where no remediation was offered against the second where they repeated the first academic term illuminated the value of a robust and contiguous refresher training program.

Clinical Readiness

The final aspect explored on the survey was the respondent's feelings regarding their clinical readiness in multiple domains. Table 4 shows Likert survey responses regarding student's readiness for the clinical setting. The "Disagree -or- Strongly disagree" responses were contextualized by comments noted below. The two respondents that participated in refresher training answered affirmatively about their perceived readiness for clinical in all surveyed domains. Only one survey respondent (Survey participant 3) did not participate in some form of refresher training. They expressed that upon returning to clinical they subsequently felt unprepared to obtain radiographs. They commented, "I did feel behind as other students were fresh on the positioning and I had been out of the program for months so felt rusty on the positioning. It definitely showed in my confidence." They also faced challenges in re-acclimating to student life and maintaining their own physical and mental well-being. Comments expounded, "I had been out of the program and did have to get used to studying while working full time in practicum" (Survey participant 3). Comparing the experiences of survey participant three

against the other two respondents suggests that refresher training has a positive impact on the clinical readiness of students returning to clinical after a lapse of time.

Table 4

Survey responses regarding experiences with refresher training

Question	Agree -or- Strongly agree	Neutral	Disagree -or- Strongly disagree
I felt prepared to return to clinical in terms of obtaining radiographs.	2		1
I felt prepared to return to clinical in terms of safely caring for my patients' holistic needs.	3		
I felt prepared to return to clinical in terms of working as a member of healthcare team.	3		
I felt prepared to return to clinical in terms of my responsibilities as a student.	2	1	
I felt prepared to return to clinical in terms of maintaining my own emotional and physical well-being.	2		1
I felt prepared to return to clinical in terms of my professional duties as outlined in the Canadian Association of Medical Radiography Technologists [CAMRT] Best Practice Guidelines and Code of Ethics.	3		
My return to the hospital setting was as smooth as possible.	3		

The interviewee successfully completed the full term one academic course load on two separate occasions, and upon entering clinical on those occasions indicated that they felt prepared. Their final pathway, where clinical entry was preceded by an approximate six-month lapse in studies was more challenging. They expressed difficulty re-integrating into the radiographic image analysis assessment processes. Additionally, joining an existing cohort in their second term was alienating. They noted that they were able to find a confidant, and that the program helped nurture that connection.

> I lucked out that the first person I was with in clinical kind of became a friend and then . . . back to school level they reorganized the groups and, I'm assuming they purposely did it, but they did keep me with her . . . so I feel like they did what they could, it's just hard kind of starting new with a group of people that already have their groups.

This statement highlights the importance of peer connections, and the positive impact made my faculty nurturing those connections.

When asked if they shared with the hospital staff about their health challenges they said, “I didn't and kind of looking back maybe should have”. In their subsequent clinical course prior to graduation they were more transparent, noting “that clinical instructor was a bit more forward . . . kind of got to know each of us and so it just came out right away why I had stopped in the program whereas I don't even know if my [previous] two instructors knew of my history, we didn't really talk about it much so, I don’t think they did know.” In the final clinical term, staff initiating the conversation opened the door for the student to share and be understood. Having the perspective to be able to compare multiple experiences they noted that transparency allowed the hospital staff to better understand their needs and provide appropriate supports. They also had the insight to see how their own perceived lack of confidence and fear of being seen as different hindered their ability to be open. This is potentially another lesson for faculty and clinical instructors to take the lead in opening the door and creating a safe space for sharing to create better student outcomes.

Discussion

As Tinto (1994) would say, post secondary institutions must commit to the education of all, not just some, of their students. In garnering the experiences of individuals who have stopped-out and attempted to return to their hands-on studies after a lapse of time the hope is to ignite a conversation about better supporting persisters in this situation. As educators like Chamunyonga (2020) and Maize (2010) voiced, hands-on learning environments offer unique challenges that differ from traditional classroom

based educational experiences. They can be high-stakes, stressful environments where supervisors are often working professionals rather than educators and remediation can be challenging. Given the sample is small (n=3) I feel remiss to use the word “theme” when describing lessons from these comments. Rather, these insights provide information to provoke thought and consideration about how to better support students returning to hands-on training after a time-lapse.

As we can see in the negative staff interaction noted in the survey summary of post-secondary institutions and the positive clinical instructor experience noted by the interviewee, one individual can have significant influence. Educators and staff must consider their individual impact on student experiences. Parallel to that point is the impact of social connection. As the interviewee shared, nurturing those peer connections made a positive impact on their experience. Educators taking an active role in developing a culture of positivity and connection may open the door for students to follow suit.

Communication was discussed in multiple contexts. A survey respondent shared that information about returning to clinical was not readily available. Developing clear policy that is readily accessible may be advantageous. The interviewee shared that they were unaware of the services available to them. Amalgamating available resources into a pamphlet or other aide that can be shared with struggling students, and training faculty to utilize it may provide clarity. Providing this information early on in a student’s trajectory may prevent leaving. The interviewee also shared that in hindsight, refraining from open communication with their clinical instructors hindered their progress. Fostering safe spaces for students to share may facilitate more forthright communication.

The openness of these participants has hopefully started a conversation. How can post-secondary institutions further support individuals to return to hands-on educational settings after a time lapse? Do institutions that support hands-on training have robust policy and supports in place to guide these students? If so, are they effective? To answer these questions institutions must continue to evaluate the experience of students who experience the stop-out trajectory. Long term studies following stories of persistence may provide deeper understanding.

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Appendix A: Request For Assistance to Coordinators

SFU SIMON FRASER UNIVERSITY
ENGAGING THE WORLD

Dear *[Program Coordinator]*

Greetings, my name is Christina Wasstrom, and I am currently a Master of Educational Leadership candidate at Simon Fraser University (SFU) in the Faculty of Education. I am also a faculty member of the College of New Caledonia Medical Radiography program. As part of my master's degree requirements, I am conducting a research study exploring the experiences of radiography students attempting to return to clinical education terms after a lapse of time. Participants will be invited to complete an anonymized survey and/or join me for a one-on-one interview over Zoom® at a time convenient to them.

The purpose of this research is to gain an authentic representation of the realities of students who leave a British Columbian radiography diploma program for whatever reason, and then attempt to return to the *clinical environment* after a lapse of time. **I am emailing to request your assistance to recruit individuals to participate.**

I understand the busy workload coordination duties already provide and I appreciate that this is an additional draw upon your valuable time. As such, if you are willing to help, I hope to work with you to identify options that may lessen the burden of your voluntary cooperation.

- Going back five years, I am asking that you distribute an email broadcast, that I will provide, to all former and current students (2016 intake -to- current cohort). Or if it would be easier for you distribute the email broadcast to only individuals who specifically meet the following criteria:
    - **Former or current student of a Medical Radiography Diploma Program in British Columbia** (from the 2016 intake to current cohort) -who-,
    - **left their radiography program at some point while maintaining their eligibility to return** -and-
    - **returned to a clinical practicum term after a lapse of time**
- Within the email broadcast participants are asked to direct questions to the research team. However, should any potential participants reply to you personally I would ask that you instruct them to contact the research team directly using the prepared statement below.

    - "Please note that this email has *not* been forwarded onto the research team. If you have questions for the research team, please use the email address found within the original message. For ease, this information is included here: Lead researcher, Christina Wasstrom, can be reached at [. . .]@sfu.ca. Her faculty supervisor, Dr. Michelle Pidgeon can be reached at [. . .] or [. . .] @sfu.ca"
- We can collaborate on a recruitment time frame that is most convenient for you.
    - I hope to carry out recruitment over a six-week period, beginning with an initial email transmission and subsequent follow-up three weeks later if necessary.

Thank you for considering assisting with this research. Please let me know via email at [. . .]@sfu.ca at your earliest convenience if you can assist, and we can collaborate on the time frame, and I can forward the participant invitation. If you have questions or concerns about this study, you can contact my Senior Supervisor Dr. Michelle Pidgeon, Faculty of Education at [. . .] or [. . .]@sfu.ca.

Sincerely,

Christina Wasstrom, RTR, PID, MEd Candidate, Faculty of Education, Simon Fraser University [. . .]@sfu.ca

[. . .]

Appendix B: Letter of Invitation

Body of email:

Greetings, my name is Christina Wasstrom, and I am a Master of Educational Leadership candidate at Simon Fraser University (SFU) in the Faculty of Education. As part of my master's degree requirements, I am conducting a research study exploring the experiences of radiography students attempting to return to clinical education terms after a lapse of time.

The purpose of this research is to gain an authentic representation of the realities of students who leave the program for whatever reason, and then attempt to return to the clinical environment after a lapse of time. I am particularly interested in learning about how individuals persevered in their health care education journey. I feel that you have extremely valuable information to offer by sharing your thoughts, feelings, and experiences. Participating in this research will allow your voice to be heard. This information will contribute to lessons that can hopefully improve the experience for future students.

To participate in this study, you must be a **former or current student of a Medical Radiography Diploma Program in British Columbia** -who-,

- **left your radiography program at some point while maintaining your eligibility to return** -and-
- **returned to a clinical practicum term after a lapse of time**

If you meet the criteria of this study and are interested in participating, you are being invited to complete an **online survey** that you can access directly here - [. . .]. Feel free to forward this invitation to individuals you know who meet the criteria and may also be interested. The survey will take approximately **20 minutes** to complete.

Additionally, if you would be willing to further elaborate on your experiences you are invited to participate in a **one-on-one interview** with myself online over Zoom®. This interview would be scheduled at a time convenient to you and take approximately 45-60 minutes. The opportunity to provide your contact information to participate will be at the end of the survey, and additional information forwarded to interested individuals.

Attachment: Appendix C: Survey Participant Consent form

Appendix C: Survey Participant Consent Form

Embedded in first page of survey:

Survey Consent Form

Project Title: "Supporting Post-Secondary Health Science Students with Atypical Trajectories: Lessons Learned from British Columbian Radiography Students Returning to Clinical Education After a Lapse of Time"

Thank you for considering participating in a survey about radiography students returning to clinical education after a lapse of time. Before you decide whether to participate, please take time to review the following information. If you have any questions or need additional information, please contact me at [. . .] @sfu.ca.

I, Christina Wasstrom, am conducting this survey as part of a research project exploring experiences of British Columbian radiography students returning to clinical education after a lapse of time. I am a Medical Radiography instructor at the College of New Caledonia and this project is a requirement for the Masters in Educational Leadership program at SFU. This research is being supervised by Dr. Michelle Pidgeon, Faculty of Education. I will present the results of this research in the form of a written report to my faculty supervisor, as well as a public poster session at the 2022 Summer Institute at SFU.

The purpose of this research is to learn more about the realities of students who leave the program for whatever reason, and then attempt to return to the clinical environment after a lapse of time. If you choose to participate, you will be asked to complete an online survey that will take you an estimated 20 minutes to complete. The survey explores multiple facets of your experience returning to the radiography program, experiences with the institution, the program faculty, refresher material provided to you and your comfort in specific topic areas as you headed back into the clinical environment. You may choose not to answer any of the questions, and you may also end your participation in the survey at any point in the process.

This is a **minimal risk study**. The stress involved in completing the survey will be no more than the stress that you encounter in your daily work. This survey collects anonymized data. Anonymized means there will be no identifying information attached to the survey responses.

I will be keeping any information I have about you or your participation confidential. I will not release your name or describe your participation in the survey in such a way that you could be identified.

The data related to this research study will be encrypted on a **password protected** personal computer or other device. This survey is hosted by SurveyMonkey, a US company. Any data you provide may be transmitted and stored in countries outside of Canada, as well as in Canada. It is important to remember that privacy laws vary in different countries and may not be the same as in Canada. Any contact information you provide will be kept separate from study data and will be destroyed after the final research report is submitted in fulfillment of my Master of Educational Leadership requirements at SFU. Any list of participant information will be stored separately from the raw data on a password protected personal computer or other device (digital recorder, smartphone, etc.). I will destroy the raw data (transcripts, notes, etc.) after five years.

The anonymized, collated data will be included in a final report and results will be presented during the 2022 Summer Institute (where MEd candidates present their research to peers and evaluators), other conferences, and publication opportunities. In addition, main findings from this research may be presented at academic conferences and published in higher education peer-reviewed journals.

Participation in this research is voluntary. You can decide to stop participating at any point in the process, for any reason. Your decision to participate (or not) will not be shared with anyone. Not participating or withdrawing will not affect your grades in any course or the services that you receive as part of your program. There are no negative consequences for withdrawing your participation, and I will erase and/or destroy any information already collected from you. You may not be able to withdraw from the survey after it is submitted, as I may not know who they are.

Compensation. Participants will not be compensated for their participation.

I invite you to contact me directly if you wish to receive a summary of the results when available or if you have any questions. I can be reached at [. . .] @sfu.ca

If you would like to talk to my faculty supervisor, you can reach Dr. Michelle Pidgeon at [. . .] or [. . .] @sfu.ca.

If you have any concerns about your rights as a research participant and/or your experiences while participating in this study, you may contact the SFU Office of Research Ethics at dore@sfu.ca or 778-782-6618

☐ I agree to participate in this study

Appendix D: Interview Participant Consent Form

SFU SIMON FRASER UNIVERSITY
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Interview Consent Form

Project Title: "Supporting Post-Secondary Health Science Students with Atypical Trajectories: Lessons Learned from British Columbian Radiography Students Returning to Clinical Education After a Lapse of Time"

Thank you for considering participating in an interview about radiography students returning to clinical education after a lapse of time. Before you decide whether to participate, please take time to review the following information. If you have any questions or need additional information, please ask! If, after reviewing this information, you are still interested in participating, then we will go forward with the interview which should take approximately 45-60 minutes of your time.

I, Christina Wasstrom, am conducting this survey as part of a research project exploring experiences of British Columbian radiography students returning to clinical education after a lapse of time. I am a Medical Radiography instructor at the College of New Caledonia and this project is a requirement for the Masters in Educational Leadership program at Simon Fraser University [SFU]. This research is being supervised by Dr. Michelle Pidgeon, Faculty of Education. I will present the results of this research in the form of a written report to my faculty supervisor, as well as a public poster session at the 2022 Summer Institute at SFU (where MEd candidates present their research to peers and evaluators).

The purpose of this research is to learn more about the realities of students who left a British Columbian radiography program for whatever reason, and then attempted to return to the clinical environment after a lapse of time. I will ask you about individual factors related to your unique trajectory, and I have attached the specific questions for you to review. You may choose not to answer any of my questions, and you may also end the interview at any point during the scheduled time.

This is a **minimal risk study**. The stress involved in the interview conversation will be no more than the stress that you encounter in your daily work. Also, I will be keeping participants identity confidential to reduce risk. Not participating or withdrawing will not affect your grades in any course or the services that you receive as part of your program.

This interview will be hosted by Zoom and transcribed using Otter.ai transcription services, both of which are hosted in the United States of America [USA]. Any data you provide may be transmitted and stored in countries outside of Canada, as well as in Canada. It is important to remember that privacy laws vary in different countries and may not be the same as in Canada Any information you share during your interview **will remain confidential**. I will ask you to choose a pseudonym for use in the research study. I will transcribe the interview myself, using that pseudonym, and the resulting transcript will not include any information that could be traced back to you. Audio-recordings, transcripts, and other information related to this research study will be kept encrypted on a **password protected** personal computer or other device (digital recorder, smart phone, etc.). The list matching participant information and pseudonyms will be stored separately on paper, in a locked cabinet in my office. Any contact information you provide will be kept separate from study data and will be destroyed after the final research report is submitted in fulfillment of my Master of Educational Leadership requirements at SFU. I will destroy the audio recordings after five years.

The anonymized, collated data will be included in a final report and results will be presented during the 2022 Summer Institute, other conferences, and publication opportunities. In addition, main findings from this research may be presented at academic conferences and published in higher education peer-reviewed journals.

Participation in this research is voluntary. You can decide to stop participating at any point in the process, for any reason. Your decision to participate (or not) will not be shared with anyone. There are no negative consequences for withdrawing your participation, and I will erase and/or destroy any information already collected from you.

Compensation. Participants will not be compensated for their participation.

I invite you to contact me directly if you wish to receive a summary of the results when available or if you have any questions. I can be reached at [. . .] @sfu.ca.

If you would like to talk to my faculty supervisor, you can reach Dr. Michelle Pidgeon, Faculty of Education at [. . .] or [. . .] @sfu.ca.

If you have any concerns about your rights as a research participant and/or your experiences while participating in this study, you may contact the SFU Office of Research Ethics at dore@sfu.ca or 778-782-6618.

Signing this consent form indicates that:

- You agree to participate in this research and to having the interview audio-recorded.
- You understand that you are free to stop participating in this research at any time.

Signature of Participant Date (MM/DD/YYYY)

Printed Name of Participant

Appendix E: Survey Instrument

Please select the extent to which you agree or disagree with the statements below by selecting the corresponding options ranging from strongly disagree to strongly agree. Comment boxes are included with each question for instances in which you would like to elaborate on your experiences.

Each grouping of statements address a unique component of your experience returning to the radiography program-

- Page 1: Your experience with the **educational institution or college**.
- Page 2: Your experience with the **radiography program staff**.
- Page 3: Your experience with **refresher courses, workshops, tutoring or other processes provided to you by the college or program** -*if applicable*.
- Page 4: Your level of **comfort in specific topic areas** as you returned to the clinical setting
- Page 5: Your **progress in the subsequent term and the program overall.**

	Strongly Disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly Agree**
1) The post-secondary institution supported my return to the program	☐	☐	☐	☐	☐
2) The post-secondary institution clearly defined the steps required to return to the program.	☐	☐	☐	☐	☐
3) My inquiries to the post-secondary institution were answered in a timely fashion	☐	☐	☐	☐	☐
4) The fees associated with my return were reasonable.	☐	☐	☐	☐	☐

5) I felt like the post-secondary institution valued me as an individual.	☐	☐	☐	☐	☐
6) The radiography program faculty supported my return to the program	☐	☐	☐	☐	☐
7) The radiography program faculty clearly defined the steps required to return to the program	☐	☐	☐	☐	☐
8) The radiography program responded to my inquiries in a timely fashion.	☐	☐	☐	☐	☐
9) I felt like the radiography program faculty valued me as an individual.	☐	☐	☐	☐	☐
10) Did you participate in a refresher process before heading into the hospital environment	Yes ☐		No ☐ **If no skip to question 14**		
	Strongly Disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly Agree**
11) The refresher process that I participated in was fair.	☐	☐	☐	☐	☐

12) The refresher process I participated in allowed me adequate access to the on-campus lab to ensure I could practice my skills.	☐	☐	☐	☐	☐
13) The refresher process that I participated in allowed ample opportunity for me to ask questions.	☐	☐	☐	☐	☐
14) I felt prepared to return to clinical in terms of obtaining radiographs.	☐	☐	☐	☐	☐
15) I felt prepared to return to clinical in terms of safely caring for my patients' holistic needs.	☐	☐	☐	☐	☐
16) I felt prepared to return to clinical in terms of working as a member of healthcare team.	☐	☐	☐	☐	☐
17) I felt prepared to return to clinical in terms of my responsibilities as a student.	☐	☐	☐	☐	☐
18) I felt prepared to return to clinical in terms of maintaining my own emotional and physical well-being.	☐	☐	☐	☐	☐

19) I felt prepared to return to clinical in terms of my professional duties as outlined in the Canadian Association of Medical Radiography Technologists [CAMRT] Best Practice Guidelines and Code of Ethics.	☐	☐	☐	☐	☐
20) My return to the hospital setting was as smooth as possible.	☐	☐	☐	☐	☐
21) I was subsequently successful in the course I returned to.	Yes ☐		No ☐		Prefer not to answer ☐
22) I was subsequently successful in completing the Medical Radiography Diploma Program.	Yes ☐		No ☐		Prefer not to answer ☐
23) How long was the lapse of time from when you left the program until you returned?	_____ *[Free text]* _____				

Thank you very much for taking the time to participate in this survey.

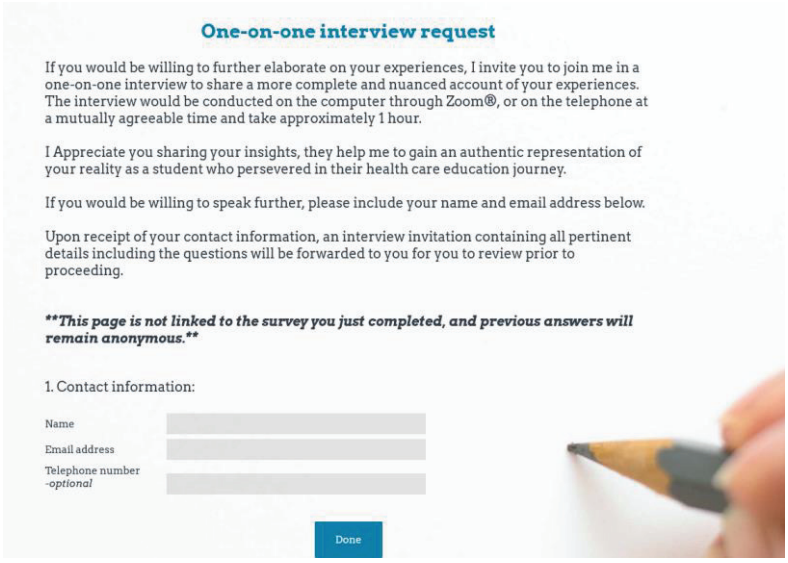
The information you have shared is extremely valuable and contributes to lessons that can hopefully improve the experience for future students.

If you have any questions about this project, please contact Christina Wasstrom via email [. . .] @sfu.ca.

You may also contact Dr. Michelle Pidgeon, Faculty of Education, [. . .] or [. . .] @sfu.ca.

Please *submit* before closing window

-'Submit' re-directs browser to separate URL from study to invite participant to interview:



One-on-one interview request

If you would be willing to further elaborate on your experiences, I invite you to join me in a one-on-one interview to share a more complete and nuanced account of your experiences. The interview would be conducted on the computer through Zoom®, or on the telephone at a mutually agreeable time and take approximately 1 hour.

I Appreciate you sharing your insights, they help me to gain an authentic representation of your reality as a student who persevered in their health care education journey.

If you would be willing to speak further, please include your name and email address below.

Upon receipt of your contact information, an interview invitation containing all pertinent details including the questions will be forwarded to you for you to review prior to proceeding.

*****This page is not linked to the survey you just completed, and previous answers will remain anonymous.*****

1. Contact information:

Name

Email address

Telephone number
-optional

Done

Appendix F: Semi-structured Interview Guide

Introduction

Thank you for agreeing to participate in this interview.

I am interviewing you to gain an understanding of your experiences returning to the radiography program during a clinical term after a period of time away from the program. My goal here is gain an understanding of what the process was like for you so I can learn lessons to improve the experience for future students. There are no right or wrong answers, I am interested in your own experiences.

Participation in this research is entirely voluntary. You have the right not to answer any question and to withdraw from the project at any time. You can decide to stop participating at any point of the process, for any reason. Your decision to participate (or not) will not be shared with anyone. There are no negative consequences for withdrawing your participation.

All information gathered through this interview will be coded and all personal identifiers will be removed, which ensures your confidentiality. Would you like to choose a pseudonym yourself?

Only me and my faculty supervisor, Dr. Michelle Pidgeon, will have access to the data. Electronic data records (transcriptions of interviews) will be stored in a password protected and encrypted file on a USB drive which will be located in a locked cabinet in my office for five years and will only be accessible by me. After that time, the electronic files will be erased. Your confidentiality will be respected during this research project and in the dissemination of its results (at no time will your name and/or affiliation) be disclosed.

I anticipate this interview will take about 45-60 minutes. I will be using the questions I previously emailed you. If you consent, I would like to audio-record this interview. I will use this audio recording to transcribe our conversation verbatim and compile notes identifying themes in our discussion. You will not be identified by name in the transcription, or in any reports of the completed study or in any presentation or dissemination of the findings (e.g., research papers, presentations etc.). All efforts will be made to ensure that you are not identified by others by

changing or removing information that might otherwise identify you. I will provide you with the transcript and notes for your verification, as soon as possible after the interview.

Did you have any questions for me before we begin?

May I turn on the digital recorder?

Please note this guide represents main themes to be discussed and does not discuss various prompts that may also be used (examples given for each question). General prompts such as "Can you tell me more about that?" may also be used.

Establishing rapport

Before we begin, I will share a little bit about myself and my background. Followed by asking the participant if they could tell me a little about themselves. Questions here will be tailored to the interview at hand.

1. **Attrition**
    - Can you walk me through your initial exit from the program?
        - **Prompts:** What factors led to your departure? What institution resources did you interact with (counselling, instructors, administrators…)? Who did you turn to for help/advice? Do you feel there was any intervention the program or institution could have provided to prevent your initial exit? How did leaving the program impact your life?
2. **Return**
    - Can you walk me through the process of returning to the program?
        - **Prompts:** How long were you away from the program? What factors motivated your return to the program? What were your feelings about returning?
        - **Prompts:** How did you contact the institution/program about returning? What did the initial registration process look like for you? What

institution resources did you interact with (counselling, instructors, administrators…)?

- **Prompts:** Did you encounter barriers in your personal life? Did you encounter barriers from the post-secondary institution? Did you encounter barriers from the program faculty?

3. **Refresher**
    - Can you tell me about how you were prepared to return to the hospital?
        - **Prompts:** Did you participate in a refresher process with the post-secondary institution before returning to the hospital setting?
            - If no- Why?
            - If yes- Can you describe the process you participated in? Where you satisfied with the resources provided? Did you feel the process gave you the tools you needed to succeed in clinical?
4. **Clinical**
    - Can you walk me through your return to the hospital?
        - **Prompts:** What was your reception like? What were you feeling as you returned to the hospital? Did you feel like you had the tools you needed for the level you were at? Where you successful in the subsequent clinical course?
5. **Conclusion**
    - Is there anything else you would like to share that I haven't already asked you about?
    - Would you like to receive a copy of the final research report?

Thank you very much for taking the time to talk to me today, I appreciate it. I will transcribe our conversation and send it to you to review before finalizing it.