



University
of Victoria

Division of
Learning and Teaching Support and Innovation
Online Retention Review Report

Working document

August 17th, 2020

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Executive summary

Background

The shift to online instruction is to support the continuity of learning and teaching during COVID-19. While the online format has been found to increase the opportunities for flexible learning, it also poses some challenges that warrant consideration. For instance, many studies have reported online classes and programs have student retention rates significantly lower than those in the traditional classroom environment. Familiarity with some of the challenges that affect online retention is key to prevent or minimize dropouts and create a successful learning experience for students.

As Figure 1 illustrates, a myriad of personal, institutional and environmental factors influence students' learning experiences and persistence in the online environment¹:

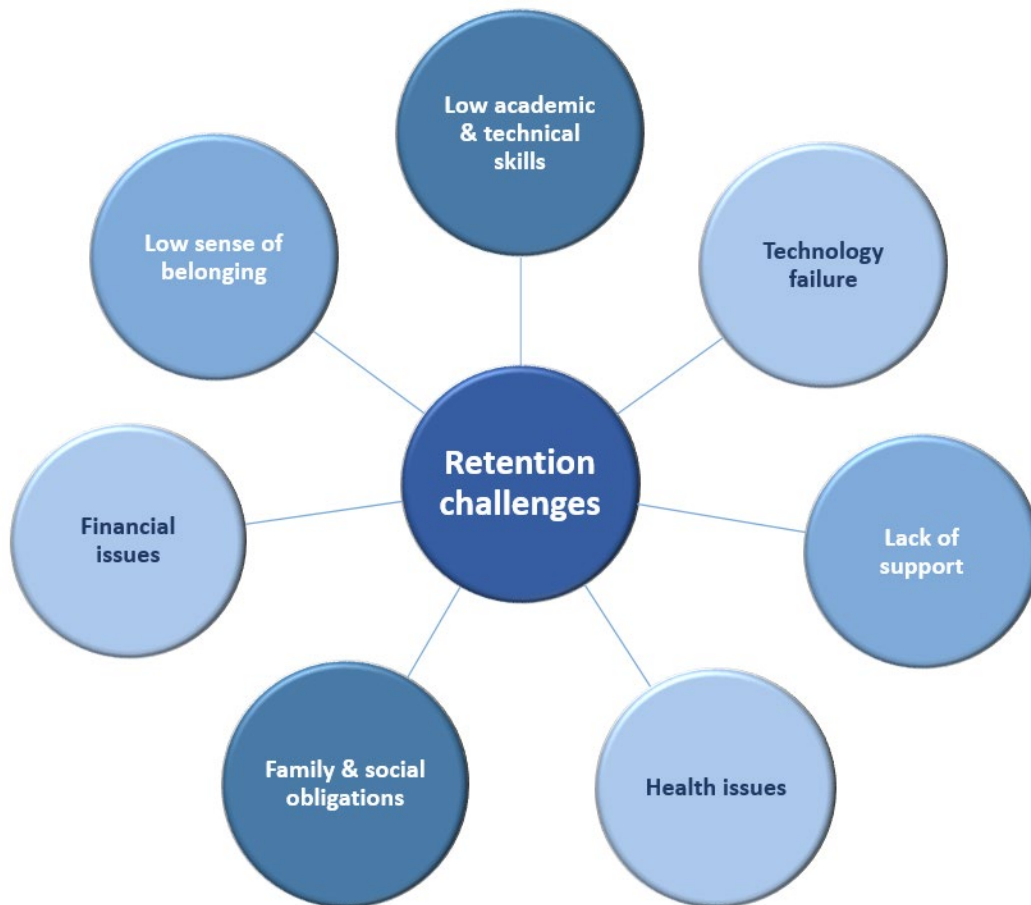


Figure 1. Challenges that affect online retention

¹ It is important to note that the literature used for this review includes studies focused on the experiences reported by students who voluntarily enrolled in online programs or courses. Currently, there is no published research on the influential factors associated with retention as universities moved classes online in response to the COVID-19 pandemic.

While it is outside its scope to provide a comprehensive overview of the full breadth of online retention literature, this document acknowledges the interaction of multiple factors on students' dropout decisions. These factors, not only include explanations of persistence based on individual characteristics but also account for the institutional conditions that are likely to facilitate or hinder students' course/program completion. This work challenges the view that early departure is caused by a deficit in students, as well as the exculpatory rationalization of dropouts as being beyond the control of the institution. It is obviously true that dropouts are sometimes related to illness, unforeseen family and employment circumstances, among other unexpected life events. Although the University might not have the capacity to address all of the factors related to why students discontinue their online classes, it is paramount to be aware that key institutional factors do impact the capacity for students to have positive and meaningful learning experiences and that institutional level strategies can optimize retention.

Aim

This report has two aims:

1. Identify and explain factors that influence online retention using relevant educational literature, and
2. Outline selected strategies to minimize challenges and optimize students' success in the online environment².

Factors affecting online student retention at the institutional level

1. Student support services

Advisory and tutoring supports, student training, orientation programs, and technical support systems can affect online students' academic success and persistence positively. These support services hold an essential role in student retention due to their impact on academic and technological readiness:

- Students who are unaware of the effort and organization required to succeed in online courses or with limited self-regulatory skills—i.e., they are unable to control effectively their own learning environment—are likely to experience demotivation or performance issues, which might induce them to quit.
- Students with low technological self-efficacy—i.e., students' perceptions about their skills to use computers and the Internet to accomplish tasks—and technical skills, might become frustrated when experiencing computer or software-related issues and end up dropping the course before they could become familiar with its technology.

It is thus crucial to identify early the needs of academically at-risk students and avoid assumptions about online students' technology readiness, as poor understanding of online

² See Appendix B for a slide package that was presented to UVic's Teaching Online Task Group on August 6th, 2020. These slides provide a succinct overview of the challenges considered in this review and the recommendations to address them.

learners' needs and circumstances could lead to inadequate or insufficient support strategies. Key online retention strategies include comprehensive orientation programs, flexible and personalized academic advising and tutoring services, alongside timely and easily accessible academic and technological skills training, and at-all-times technological support.

2. Quality curriculum

A clear and logical course design and layout are key factors for an effective online learning experience:

- Students who are new to online learning sometimes have issues understanding expectations, requirements, and accessing course materials that result in confusion and frustration.
- Uninteresting and irrelevant course elements, as well as inadequate and redundant assignment types can be demotivating and likely to cause disengagement.
- Students who lack clear expectations might experience difficulties focusing their work, and potentially encounter performance issues that lead to a sense of failure.

Providing a pedagogically sound “roadmap” for students is instrumental for a successful learning experience online. Designing effective online courses requires not only a logically organized structure but also learner-centered content that integrates accessible interactive instructional materials in combination with self-reflection exercises, collaborative activities, and a wide range of assessments suitable for engaging students with authentic environments.

3. Student experience and instructor strategies

Instructor strategies—i.e., different aspects that account for the instructor's presence in the course, such as communication, feedback, guidance for class discussions and assignments, and facilitation of social interaction—are one of the most important factors affecting retention in online courses:

- Online students who do not have the opportunity to interact with the instructor or consider their communications as poor and infrequent can feel isolated and disconnected, and thus are less likely to persist.
- Students feel demotivated if they do not get feedback on their online comments and assignments. Their frustration is rooted on the impossibility of engaging in corrective behaviors to improve their performance.
- Students might not take deadlines seriously if expectations are vague, and thus experience performance issues.
- Students who have a low or no sense of belonging or experience an uncomfortable social presence in the class avoid engaging in active social interactions and might eventually drop out.

A strong instructor presence is key to reduce students' frustration and prevent them from having wrong expectations about their classes. The instructor's role is instrumental to bridge

the distance with and between students, and by so doing, makes a significant impact on students' satisfaction and their decisions to persist.

4. Instructor readiness

Instructors who are adapting course content from face-to-face to the online learning environment need to ensure they are ready to teach online to avoid the pitfalls that effect student retention (*e.g.*, unsuitable course design for online learning, limited communication with students, misdirected facilitation of learning, and missed opportunities for social interaction among students). For example:

- Instructors may be unaware of the various factors that will affect the student population in achieving the learning goals of the course.
- Instructors might lack knowledge about facilitation skills for teaching effectively online to ensure students are sufficiently engaged.
- Due to the online learning environment and various platforms, instructors may not be familiar with how to deal effectively with the storage of information.
- Instructors might lack confidence in using technology.

An effective instructor professional development plan needs to encompass four key areas:

1. Pedagogical—course design that selects suitable instructional strategies for online learning;
2. Social—establishing meaningful social relationships with students and between students;
3. Managerial—performing administrative tasks, such as pointing to relevant information or resources; and
4. Technical—providing guidance to students needing to access technology supports.

A well-designed professional development plan for online teaching can greatly help contain attrition and increase retention rates in online classes/programs.

Limitations of the literature reviewed

It is important to note a series of limitations underlying the review that calls for caution on the interpretation of the evidence informing this report. These key limitations are:

1. *Contextual crisis*: The online learning experiences reported in the studies considered for this review did not take place during a pandemic.
2. *Temporality differences*: The online courses and programs used in the literature reviewed alluded to educational experiences that were designed to be online, not to an emergency shift from face-to-face instructional delivery to an online one.
3. *Student characteristics*: Most of the research included in this review has a population target that is unlikely to be strictly comparable to the demographics of the students participating in classes that were shifted online in our institution.

With these limitations in mind, it would be important to conduct a follow-up literature review that identifies any additional factors pertinent to retention issues once studies containing empirical evidence collected during the COVID-19 crisis start to get published. It would be also pertinent to supplement this document with educational equity resources that suggest targeted strategies to capture the needs and experiences of students from underrepresented and underserved groups in post-secondary education and ensure more equitable and meaningful opportunities for them.

Recommendations

Addressing the challenges around online retention entails the synergies from multiple stakeholders. Besides taking a coordinated and collaborative approach, retention efforts might also require the revision of current policies and procedures to enhance their consistency and clarity, as online students might not have a good understanding of the information they seek or need to fulfill institutional requirements.

Institutional support

Early interventions targeting students: Make efforts for retention early, as leaving university is more likely at the beginning of the term/program. Specific strategies involve:

- *Analyzing pre-university and beginning-term data* to identify students who might be at-risk of dropping out and implement targeted interventions.
- *Offering a comprehensive online preparation orientation* that extends over the first term and focuses on academic and technological readiness, explores some of the potential challenges of the online environment, and offers a list of services and supports on how to get assistance from faculty, academic advisors, and staff.
- *Tracking students' progress* using an early identification system to help instructors and/or advisors in detecting and tackling any forthcoming issues throughout the course term for the purpose of enhancing learning and engagement.

Academic support: Deploy ongoing efforts to offer tutoring, counseling and advising services, and remedial programs that can flexibly accommodate online students' needs. Support for learners could involve the development of five major readiness dimensions: self-directed learning, motivation for learning, computer and Internet self-efficacy, online communication self-efficacy, and learner control.

Technical training and support: Provide opportunities for students to gain technological knowledge and skills and have ongoing support to address technical issues promptly and effectively.

Quality curriculum

Well-designed online courses: Facilitate the (re)design of courses around strong pedagogical standards rather than complicated modes of instruction. Make the course goals and the

student learning outcomes the foci of a successful online experience. Consider the integration of the following elements:

- Logical structure
- Content-driven multimedia
- Clear instructions
- Easily accessible instructional materials
- Scaffolding of learning
- Varied types of assessments
- Active learning activities

Student experience and instructor strategies

Active and meaningful interaction with students: Foster a teaching culture whereby instructors engage actively and meaningfully with online students using:

- Relevant and effective feedback
- Timely, continuous, and effective communication
- Adequate guidance through the course content and assignments
- Well-defined expectations

Community building: Facilitate classroom dynamics that open opportunities to share, discuss, and explore different points of view using diverse approaches to enhance student engagement. Promote students' sense of belonging and make them feel part of a community of learning by creating a safe environment where students feel valued and open to share their ideas and collaborate with others.

Instructor readiness

Professional development: Provide instructors professional development focused on online course design, the use of technological tools, and online learning in general to increase their understanding of online students and the particular nature and challenges of online education. The professional development plan could include:

- Pedagogical theories linked to effective online learning
- Theoretical insights on online student engagement and retention
- Online students' needs
- Strategies on how to promote dynamic online discussions
- Design of online assessments
- Suitable instructional strategies and technology for their courses

Peer-mentoring program: Pair up instructors who have completed the professional development and have taught online with soon-to-be online instructors.

Instructional and technological support: Offer flexible and ongoing instructional design and technological assistance.

Institutional factors that influence online student retention: Issues and selected strategies

Introduction

During the coronavirus outbreak, many colleges and universities have transitioned from traditional classroom environments to teaching primarily online. While this transition has served to support the continuity of learning and teaching, some studies have raised concerns that it might affect retention in universities and colleges in the country (Academica Group, 2020; Steele, 2020). One could understand better some of these concerns by considering the challenges inherent to online education as identified in the extant literature. Many studies suggest online classes and programs have student retention rates significantly lower than those in the traditional environment (Ali & Smith, 2015; Herbert, 2006; Heyman, 2010; Moore & Fetzner, 2009; Patterson & McFadden, 2009). For instance, studies at different institutions in the U.S. indicated that online courses have a 10% to 20% higher failed retention rate than traditional face-to-face (F2F) courses, along with graduation rates for undergraduate degrees being only 56% (Moore & Fetzner, 2009). While there are no national statistics in Canada on online education, based on the extensive evidence from other countries it is safe to assume that completion rates in online courses are lower than in the F2F environment (Jaggars, 2011; Waugh & Su-Searle, 2014).

There is a myriad of “dropout factors” influencing why students discontinue taking an online course (Lee & Choi, 2011). A review of the literature reveals many factors that affect online retention ranging from cognitive issues (Bawa, 2016), to behavioral characteristics (Gaytan, 2015; Gomez, 2013; Lee et al., 2013; Leeds et al., 2013; Shaw et al., 2016), and technical skills (Clark-Ibanez & Scott, 2008). Other personal variables that influence students’ dropout decisions include family commitments and social obligations (Aversa & MacCall, 2013; Ice, et al., 2011; Moore & Greenland, 2017; Sorensen & Donovan, 2017), financial issues (Parkes et al., 2015), health issues (Shah & Cheng, 2018), and low academic performance (Cochran et al., 2014; Stewart, Mallery, & Choi, 2013; Colorado & Eberle, 2010). Limited access to technology, internet speed, and technology failures (Parkes et al., 2015; Abel, 2005; Motteram & Forrester, 2005) are other barriers. Finally, feelings of isolation and disconnection, and low social presence (Alman et al., 2012; Nistor & Neubauer, 2010), as well as cross-cultural communication issues (Bawa, 2016) can create untenable learning environments, leading to attrition. These multiple variables, which influence students’ persistence in online courses, are represented in Figure 1.

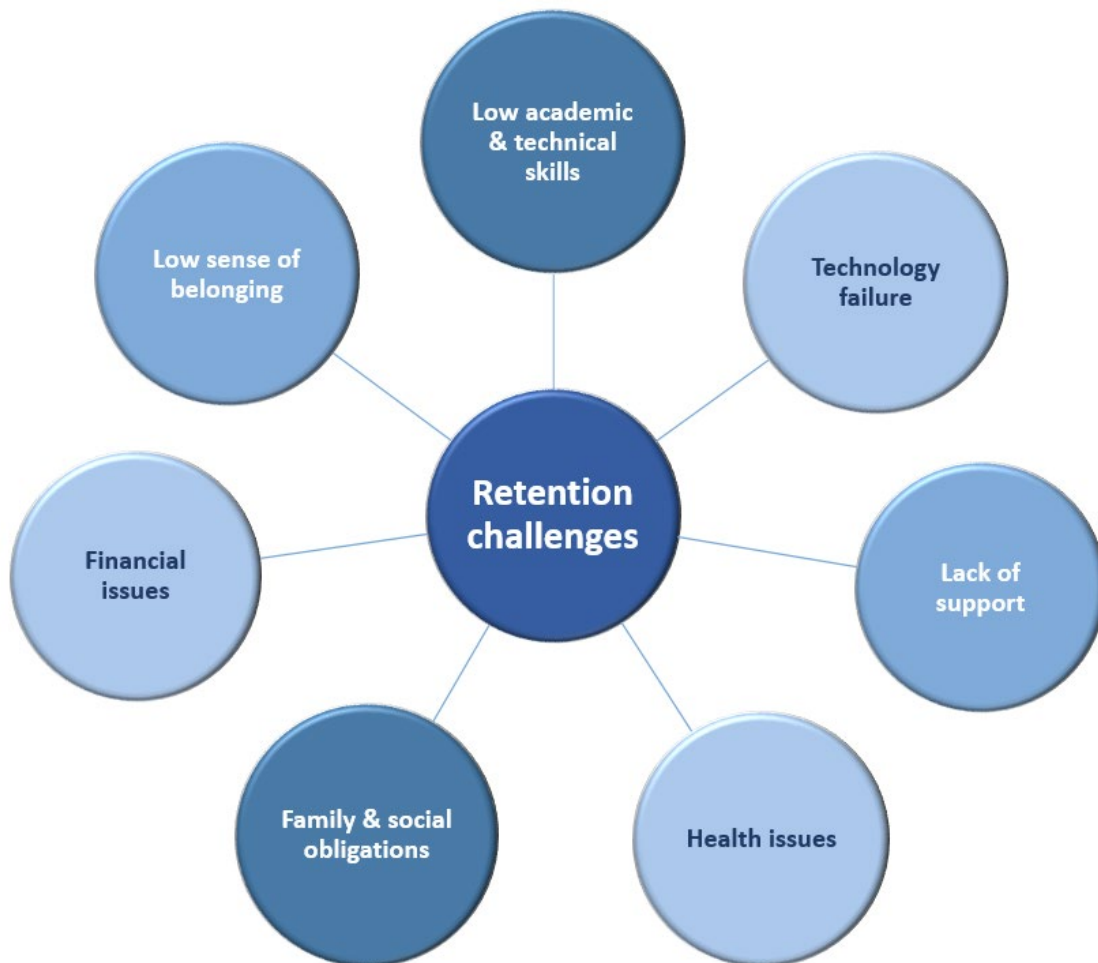


Figure 1. Challenges that affect online retention

It is beyond of the scope of this report to provide a comprehensive overview of the full breadth of online retention literature. However, it is important to outline some key ideas that emerged from the literature that explain the influential factors on students' decisions to persist or discontinue their online learning. It is also relevant to discuss, albeit briefly, some of the limitations and criticisms around online persistence models and individualistic views of retention issues. These ideas are introduced in the first section of this report. Next, this document covers the key institutional factors that affect online student retention. Finally, the report concludes with a series of strategies to address retention challenges and optimize students' success in the online environment.

Background

Currently, there is no published research on the influential factors associated with retention as universities moved classes online in response to the COVID-19 pandemic. A significant number of studies within this report are based on the experience of students who are deliberately enrolled in fully online programs. The insights and best practices then, emerging from these studies may only partially address the particular circumstances and needs of UVic students who have been admitted to and enrolled in face-to-face programs and courses. This background section provides context and relevant observations that emerged during the exploration of the extant research on retention in online learning.

There is a noticeable lack of consistency on the conceptualization of retention. Researchers have defined this concept and related terms such as dropout differently, making the comparison of dropout factors and retention strategies across institutions somehow problematic (Lee & Choi, 2011). Moreover, the categorization of retention factors is inconsistent as well. Illustrating this, Rovai's (2003) composite model of student persistence in online distance education³ has grouped retention variables into student characteristics and skills (prior to admission), internal factors, and external factors (after admission). However, this model has been subject to some criticisms and revisions. The main concern is that only internal factors (*e.g.*, academic and social integration, goal commitment, motivation, etc.) appear to have a direct influence on persistence decisions in this model, with other factors having an indirect affect through the internal ones. Parks' (2007) revision of this model⁴ seeks to balance the overemphasis on internal factors by recognizing that external factors such as financial problems, family or health issues, among others, have been major reasons why online learners decided to dropout and that there is an inter-correlation between internal factors and external factors. Other scholars in turn have contributed to include institutional aspects in their classification of retention factors, making explicit the responsibility of post-secondary institutions in providing the adequate conditions to support students' online learning. For instance, Lee & Choi (2011)⁵ have organized retention factors into three main categories: student, course/program, and environmental factors.

It is also pertinent to point out that the findings on the influence of individual factors in online retention have been mixed. For instance, the evidence related to the impact of demographic variables on the students' decision to dropout of online courses has been inconclusive (Park & Choi, 2009). Moreover, the generalizability of the findings has also been questioned, given many studies used small sample sizes or focused on a single course or program (Lee & Choi, 2011). Due to these limitations, it is imperative to be careful to moderate the interpretations of the evidence included in this document.

Where there appears to be consensus is on the recognition that the reasons for dropping out of an online program are complex and unique to each student (Willging & Johnson, 2009). Some

³ For a full list of the factors included in Rovai's model, see Figure A in Appendix A.

⁴ Further detail on Park's model can be found in Figure B included in Appendix A.

⁵ See Figure C in Appendix A for details on the factors included in Lee and Choi's work.

authors stress not only the influence of multivariate factors on online retention, but also suggest the importance of accounting for their interactions (Park & Choi, 2009). From this follows that a student's decision to persist or leave an online program or course springs from a complex interaction of personal, institutional and social factors. Departing from this assumption implies going beyond simplistic explanations of persistence based on individual characteristics and accounting for the institutional conditions that are likely to facilitate or hinder students' course/program completion. This work challenges the view that early departure is caused by a deficit in students (Zepke & Leach, 2007), as well as the exculpatory rationalization of dropouts as being beyond the control of the institution (Simpson, 2005). It is obviously true that dropouts are sometimes related to illness, unforeseen family and employment circumstances, among other unexpected life events. Although the University might not have the capacity to address fully the reasons related to why students discontinue their online classes, it is paramount to be aware of key institutional factors that might prevent them from having a positive and meaningful learning experience and have strategies in place to optimize retention. These ideas will be explored in the next sections.

Factors affecting online student retention at the institutional level

An exploration of the online education literature enables identification of four main factors that have a key impact on students' persistence: 1) student support services, 2) curriculum quality, 3) student experience and instructor strategies, and 4) instructor readiness. Each of these factors are discussed in subsequent sections.

1. Student support services

Student support services include advisory and tutoring supports, student training, orientation programs, technical support systems, and infrastructure to support students who are at risk of dropping out (Lee & Choi, 2011; Muljana & Luo, 2019). Different studies concur on the influential role of this type of support on retention and effective online education. One study suggested that students stressed the influential role of support services on helping them to succeed in online learning (Gaytan, 2015). Moreover, students who received tutoring services felt encouraged to persist and believed these services were instrumental for continuing their learning journey (Nichols, 2010). In a similar fashion, another study indicated that outreach and resources sharing interventions resulted in lower attrition rates (Shaw et al., 2016). Furthermore, research conducted at the University of West Georgia reported that advisement and orientation improved undergraduate online retention rates (Clay et al., 2009). The lack (or low quality) of support services, on the other hand, appeared to affect online students' academic success and persistence negatively (Nichols, 2010). Studies reported that a poor understanding of online students' needs and circumstances led to the use of inadequate support strategies or insufficient technological support (Friðriksdóttir, 2018; Parkes et al., 2015; Xu & Jaggars, 2011). This in turn appeared to affect attrition.

One of the reasons explaining why institutional support holds an essential role in student retention relates to its impact on student readiness. Students engaging in online education

need to be prepared to learn in this context, which is different from the traditional F2F environment. Unfortunately, in many cases students not only lack online learning readiness, but oftentimes lack academic skills as well (Xu & Jaggars, 2011). Students who are not university ready (*e.g.*, they are unable to control effectively their own learning environment or lack essential academic skills) might find the online learning experience daunting and frustrating, particularly if they are underperforming. Given the online environment relies more heavily on self-regulated learning (Driscoll et al., 2012), students who lack this kind of self-imposed academic discipline are likely to experience demotivation, which might induce them to quit. Academic support such as advising, tutoring services, and rigorous orientation programs become essential to address students' needs and help them become better prepared for a successful academic journey online.

Technical support and training also have a significant impact on retention. Technical skills related to the use of computers and the Internet (Peng et al., 2006) are also considered as important for shaping learners' readiness to participate in online courses. Researchers have noted that students with higher technological self-efficacy—*i.e.*, students' perceptions about their skills to use computers and the Internet to accomplish tasks, such as trouble shooting problems—perform better in online courses (Tsai & Tsai, 2003). Students with low technological self-efficacy and skills, on the other hand, might become frustrated when experiencing computer or software-related issues and end up dropping the course before they could become familiar with its technology (Bawa, 2016). Thus, it is important to avoid overestimating online students' technology readiness (Clark-Ibanez & Scott, 2008) and have in place training and continuous technological support (Aversa & MacCall, 2013; Blau et al., 2016; Eliasquevici et al., 2017).

2. Quality curriculum

A clear and logical course design and layout are key factors for an effective online learning experience (Ko & Rossen, 2008). Students who are new to online learning sometimes have issues understanding expectations, requirements, and accessing course materials (Driscoll et al., 2012). Not surprisingly, course design and organization are among the predictors of student satisfaction that affect students' decision to withdraw online classes (Ice et al., 2011). In relation to this, different studies reported that students stressed the importance of instructional guidance via interactive materials (Garratt-Reed et al., 2016; Harris et al., 2011), clear instructions, logical course structure, and easy accessibility of instructional materials (Hammond & Shoemaker, 2014; Harris et al., 2011) for their learning experience online. Moreover, a course design using scaffolding offers online students interesting and relevant learning elements that might foster motivation, and thus they might feel more inclined to complete their course (Pittenger & Doering, 2010).

An effective online design involves laying out the logical sequencing of the course for the students, as well as presenting its content in meaningful sections (Allen et al., 2013). Clear activity and assignment instructions are necessary to avoid students' loss of focus and confusion that might cause feelings of frustration and potential demotivation. Moreover,

provision of additional time for students to complete online collaborative learning activities is important to create opportunities for meaningful interaction and quality exchanges (Allen et al., 2013; Miller, 2014). Like in a F2F course, both formative and summative assessments are important in an online course (Miller, 2014). The use of formative assessments is particularly relevant as not only do they support learning but also are strategic for keeping students engaged in the online environment (Gikandi et al., 2011).

Furthermore, student engagement online is enhanced with the use of multiple types of learning tools (Hathaway, 2013). For instance, some scholars suggest the integration of multimedia (*e.g.*, games, videos, and simulations) in the course design to enhance the learning experience online (Almala, 2005). Additionally, the use of more than just text can enhance student engagement and accessibility conditions. Multimedia options also afford students with the opportunity to have multiple attempts at mastering content in a lesson without requiring the instructor(s) to repeat the same material (Miller, 2014). Before the integration of multimedia in the design, however, some authors suggest considering what the technology will add to the learning process (Kebritchi et al., 2017), as multimedia used in the wrong way could be detrimental (Yue, Bjork & Bjork, 2013). A successful multimedia integration requires following these approaches to enhance learning: *less-is-more*—*i.e.*, reduce or eliminate distracting materials—, *more-is-more*—*i.e.*, add features such as graphics to increase motivation—, and *focused-more-is-more*—*i.e.*, provide students ample time to learn course material while adding supporting features such as graphics, as well as challenging learning situations (Mayer, 2014).

Key to online student engagement is learner-centered content (Chametzky, 2014; Luyt, 2013). Online education scholars recommend a combination of collaborative activities, reflective activities, and clear assessment criteria is a more effective strategy to enhance learning and engagement in online courses (Niess & Gillow-Wiles, 2013). Applying course redesign strategies such as online tutorials, automated feedback, small discussion groups, and a supportive learning community is another effective way to facilitate an effective online adaptation of a F2F course that might also raise retention rates (Gilroy, 2006; Spiceland et al., 2015).

3. Student experience and instructor strategies

Instructor strategies refer to the different aspects that account for the instructor's presence in the course (*e.g.*, often and timely communication, effective and meaningful feedback, guidance for class discussions and assignments, etc.). Illustrating the importance of instructor presence for online persistence, for instance, online students rated the lack of meaningful feedback as the second most important factor affecting retention in their courses (insufficient instruction ranked first; Gaytan, 2015). Online students' frustration with the lack of feedback was rooted on their inability to engage in corrective behaviors to improve their performance. Adequate student–instructor interaction, on the other hand, “enhanced student retention, self-motivation, and pass rates” (Wuensch et al., 2008, p. 525). Other studies have also suggested the importance of immediacy, consistency, and high quality of faculty and student interactions in online courses (Artino, 2008; Gaytan 2007). Active communication helps bridge the distance

between instructor and students, and by so doing, makes a significant impact on students' satisfaction and their decision to persist (Pittenger & Doering, 2010).

Instructors who communicate course rules and policies clearly and often can reduce students' frustration and prevent them from having unrealistic expectations about their classes. This is important as learners' expectations can sometimes interfere with effective online teaching (Li & Irby, 2008; Luyt, 2013). For instance, some students might feel demotivated if they do not get instant feedback on their online comments and assignments or might not take deadlines seriously if expectations are vague (Li & Irby, 2008). Clarifying the frequency and format of feedback can be instrumental in shaping students' expectations, resulting in minimizing the issues (*e.g.*, demotivation, loss of focus) that might influence their decisions to quit their online courses.

Students expect instructors to engage them actively and promote social interaction with their peers (Harris et al., 2011). Given the lack of social cues typical of the F2F environment, online students can feel isolated and unsupported by their classmates (Aversa & MacCall, 2013; Hammond & Shoemaker, 2014; Pinchbeck & Heaney, 2017). An uncomfortable social presence can lead to a poor sense of belonging (Alman et al., 2012). When this negative feeling combines with a low sense of community, it is difficult for students to develop meaningful connections. Students with a low or no sense of belonging usually do not engage in active social interaction (*e.g.*, are likely to be "quiet" during discussions) and are more likely to drop out of online classes (Nistor & Neubauer, 2010; Shah & Cheng, 2018). It is the role of the instructor to help students develop a shared sense of belonging to the course community, to feel as valued members (Koole, 2014), and foster student engagement through activities that provide opportunities to share, interact, and collaborate. The relevance of facilitating strong feelings of community lies not only on its impact on persistence but research suggests that it also contributes to knowledge building, commitment to group goals, and cooperation among students (Rovai, 2002).

4. Instructor readiness

The task of generating new materials or adapting materials from a F2F class to an online one can be challenging (Li & Irby, 2008). To do so effectively, it requires considering how the content, pedagogy, and technology intersect; it is not just a matter of copying content used for in-person classes (Koehler et al., 2004). A professional development plan to assist instructors in adapting a course from face-to-face to online settings is essential to avoid the pitfalls that affect student retention (*e.g.*, unsuitable course design for online learning, limited communication with students, misdirected facilitation of learning, and missed opportunities for social interaction among students). The professional development plan needs to encompass the four roles identified for online instructors (Berge, 1998): pedagogical (selecting and implementing teaching methods), social (establishing social relationships with the students), managerial (performing administrative and organizational tasks), and technical (providing technical support to students).

Good pedagogy for online teaching rests on the same principles of good pedagogy in the physical classroom:

- clear learning outcomes,
- maximize student engagement,
- offer a range of assessment practices, both formative and summative, where students can demonstrate their learning,
- maintain high expectations,
- foster a course culture of community-building and collaboration, and
- be available for students when questions arise (Ambrose et al., 2010).

Good teaching looks the same online, just the learning environment (context) is somewhat different.

Instructors can face challenges with three phases of online education:

1. *Design*—Instructors may be unaware of the various factors that will affect the student population in achieving the learning goals of the course.
2. *Instruction*—Instructors might not be able to effectively adapt instructional strategies to the online learning environment.
3. *Follow-up*—Instructors might not be able to deal effectively with the storage of information, its access, or the dissemination of materials (Fein & Logan, 2003)

Some instructors might face additional challenges related to online course delivery, as they have to facilitate interactions with and between students, as well as between students and technology (Kebritchi et al., 2017). As discussed earlier, the effective facilitation of personal and social interactions in online courses is fundamental to ensure students' satisfaction and motivation, which influence their persistence decisions. It is important to note some studies report that instructors might struggle facilitating class engagement because of the lack of visual and face-to-face contact with their students (Crawley et al., 2009), thus feeling less control over how to adjust their classes. In a similar vein, instructors who are comfortable teaching in F2F settings and enjoy interacting in person with their students rarely feel that online education can offer the level of interaction endemic to faculty-student engagement (Kebritchi et al., 2017). In addition, instructors may not have the level of confidence they would like with using technology (Bawa, 2016). This is problematic, since being knowledgeable and able to incorporate different technology tools is important to create successful engagement with students, as well as being able to leverage the course software to provide students the opportunity to interact and thus create a shared community (Limperos et al., 2015; Tunks, 2012). Consequently, retention efforts need to include systematic and comprehensive professional development that addresses the low-comfort level of instructors to teach online, incorporate and use technology successfully, and design engaging online classes.

Limitations of the literature reviewed

It is important to note a series of limitations underlying the review that calls for caution on the interpretation of the evidence informing this report. These key limitations are:

1. *Contextual crisis*: The online learning experiences reported in the studies considered for this review did not take place during a pandemic. While there are some incipient publications on the move to online learning following the COVID-19 outbreak (Pather et al., 2020; Ramos-Morcillo et al., 2020) and other severe crises like natural disasters (Hartman & DeMatteis, 2008; Jarrell et al., 2008), no scholars have studied online retention issues in post-secondary education during a global epidemic yet. Given the unprecedented and complex nature of the current crisis and the concomitant forced disruption to the University's educational practices, much more complex retention challenges are likely to emerge and require strategies unforeseen in the extant literature.
2. *Temporality differences*: The online courses and programs used in the literature reviewed alluded to educational experiences that were designed to be online. In contrast, the context our institution is facing now is much more aptly described as an emergency, and hopefully temporary, shift from face-to-face instructional delivery to an online one. The distinction between planned effective online instruction as reflected in the empirical evidence from most of the studies reviewed and the one enacted in a state of emergency is critical. Consequently, there might be significant implications for retention outcomes that the research focused on the former could not fully anticipate.
3. *Student characteristics*: Most of the research included in this review has a population target that is unlikely to be strictly comparable to the demographics of the students participating in classes that were shifted online in our institution. Indeed, the most common demographic data used in the studies reviewed were age, gender, and racial/ethnic background. Some studies also included data on work status (e.g., full-time), academic preparation and prior online learning experience. Scholars within this literature contend that a key shortcoming of these studies is how it disguises the diversity of its population by gathering samples of students and amalgamating them into averages, which produces an illusory "typical learner" (Wojciechowski & Palmer, 2005). In fact, there is a scarcity of studies focused on the retention of underrepresented populations such as Indigenous or first-generation students—the works of Willems (2012) and Stone & O'Shea (2019) being the exception. Moreover, students from low socio-economic, non-English speaking, rural, and refugee backgrounds are mostly neglected in the overarching online retention research. The same goes for students with chronic health issues or students living with disabilities. Given this significant gap, it would be advisable to ***remain particularly attentive to the needs of typically***

underserved student populations during the online transition to ensure that they are not left behind, exacerbating long-standing equity issues.

With these limitations in mind, it would be important to conduct a follow-up literature review that identifies any additional factors pertinent to retention issues once studies containing empirical evidence collected during the COVID-19 crisis start to get published. It would be also pertinent to supplement this document with educational equity resources that suggest targeted strategies to capture the needs and experiences of students from underrepresented and underserved groups in post-secondary education and ensure more equitable and meaningful opportunities for them.

Recommendations

Based on the institutional factors that influence online retention discussed earlier, this section offers a series of recommendations outlining strategies to minimize issues and optimize students' success in the online context⁶. Consideration of these recommendations requires a collaborative approach, as addressing issues around online retention entails the synergies from multiple stakeholders (Aversa & MacCall, 2013; Harris et al., 2011; Leeds et al., 2013; Shaw et al., 2016; Smailes & Gannon-Leary, 2011). Besides a coordinated and collaborative approach, retention efforts might also require the revision of current policies and procedures to enhance their consistency and clarity, as online students might not have a good understanding of the information that they seek or need to fulfill institutional requirements (Rovai, 2003).

Student support services

Early interventions targeting students: Make efforts for retention early, as leaving is more likely at the beginning of the term/program (Aversa & MacCall, 2013). Specific strategies involve:

- *Mining and analyzing pre-university and beginning-term data to identify potential at-risk students* (Raju & Schumacker, 2015; Colorado & Eberle, 2010). The analysis of these data could inform decision-making to establish policies, procedures, criteria, and resources (Haydarov et al., 2013). More specifically, this analysis could inform targeted approaches to engage and train students (Boston et al., 2011; Cochran et al., 2014; Hachey et al., 2013), as well as the development of resources for enhancing their chances of retention (Xu & Jaggars, 2011). These resources could target students who might be at-risk of dropping out, such as first-year students and those enrolled in courses with high attrition rates (Wladis & Hachey, 2017; Wladis et al., 2014).
- *Offering an online preparation orientation* (Muljana & Luo, 2019; Angelo et al., 2007). The orientation sessions could explore topics, such as academic and technological readiness, learning strategies, and online learning expectations (Eliasquevici et al., 2017;

⁶ See Appendix B for a slide package that was presented to UVic's Teaching Online Task Group on August 6th, 2020. These slides provide a succinct overview of the challenges considered in this review and the recommendations to address them.

Gaytan, 2015; Hachey et al., 2013; Ice et al., 2011; Lee et al., 2013). Besides providing suggestions on how to develop some of the characteristics that have been found to be positively related to retention rates (*e.g.*, self-discipline, time management, and self-efficacy), it is important that the orientation discloses some of the potential challenges of the online environment and offers instructions on how to get assistance from faculty, academic advisors, and staff (Aversa & MacCall, 2013). In addition to introducing students to a wide array of information (*e.g.*, educational and career counseling, administrative processes such as registration, technical support, study skills assistance, library services, and students' rights and responsibilities), it is also relevant to give them instructions on how to use the university systems, the course management system, and other relevant technology (Tyler-Smith 2005). It might be a good idea to give students a chance to practice using the technology in one of the sessions. Furthermore, the orientation could involve a discussion of expectations, of both faculty and students (Aversa & MacCall, 2013). Effective orientations are not only comprehensive but also extended over the first term so that students receive information and reminders in short chunked formats, rather than through just one single information packet (Clay et al., 2008-2009).

- *Tracking students' progress* (Lee et al., 2013). The tracking process could use an early identification system (Shaw et al., 2016), typically found in the Learning Management System. The results of early performance measurements could provide helpful information to guide the instructor and/or advisor to detect and tackle any forthcoming issues throughout the course term (Nistor & Neubauer, 2010). Moreover, the early identification system would enable to direct students who are struggling academically to relevant support services, such as supplementary instruction or tutoring (Lee & Choi, 2011).

Academic support: Deploy ongoing efforts to offer tutoring, counseling and advising services⁷, and remedial programs that can flexibly accommodate online students' needs (Boston et al., 2011; Gaytan, 2015; Heyman, 2010; Moore & Greenland, 2017; Nichols, 2010). Ongoing and readily available assistance is essential for the retention and success of online students. Moreover, support for learners who are unprepared to participate in online courses could involve the development of five major readiness dimensions: self-directed learning, motivation for learning, computer and Internet self-efficacy, online communication self-efficacy, and learner control (Hung et al. 2010).

Technical training and support: Provide opportunities for students to gain technological knowledge and skills and have ongoing support to address technical issues promptly and effectively (Aversa & MacCall, 2013). For example, students could be introduced to the

⁷ Different authors stress the importance of having advisers trained to counsel students in need to handle contextual or emotional challenges. Such preparation involves, for instance, the ability to counsel students in a way that meets students' need to feel socially connected not only to peers and instructors, but also to staff at the institution (Müller, 2008). Moreover, other scholars have suggested the importance to include resources to ease the trauma emerging from a student's dropout decision once he/she realizes that withdrawal is the best course of action (Perry et al., 2008)

technology used for instruction before the course/program starts. Individual “test drives” of the system might eliminate anxiety in this area. The same effect applies when technical support services, including a robust course management system and technological tools, are easy to use and readily available for online students (Eliasquevici et al., 2017; Hughes, 2004). It might be also pertinent to provide guidelines on the educational technologies used in the online courses (Aversa & MacCall, 2013).

Quality curriculum

Well-designed online courses: Facilitate the (re)design of courses around strong pedagogical standards rather than complicated modes of delivery (Clark-Ibáñez & Scott, 2008) making the course goals and the student learning outcomes the foci of a successful online experience (Driscoll et al., 2012). An effective online course design includes the following elements:

- Logical structure (Hammond & Shoemaker, 2014; Ice et al., 2011);
- Content-driven multimedia (Mayes et al, 2011);
- Clear and multimodal instructions (Parkes et al., 2015; Stewart et al., 2013);
- Easily accessible and engaging instructional materials (Garratt-Reed et al., 2016; Hammond & Shoemaker, 2014; Harris et al., 2011; Ice et al., 2011);
- Scaffolding to support students’ learning and help them stay on track (Pittenger & Doering, 2010);
- Student interaction and active participation (Eliasquevici et al., 2017; Thorman & Zimmerman, 2012).

Student experience and instructor strategies

Active and meaningful interaction with students: Foster a teaching culture whereby instructors engage actively with online students, particularly those who are struggling academically (Kebritchi et al., 2017). Meaningful and effective feedback would enable students to be more confident in their work and improve their performance, and thus feel encouraged to persist (Fredrickson, 2015; Gaytan, 2015; Heyman, 2010; Shaw et al., 2016). Timely, continuous and effective communication, adequate guidance through the course content and assignments, and well-defined expectations allow students to avoid confusion and have a clear focus, making them feel more in control of their learning, and thus more likely to complete their course (Boston et al., 2011; Heyman, 2010; Khan et al., 2017; Parkes et al., 2015; Pittenger & Doering, 2010; Sorensen & Donovan, 2017; Stewart et al., 2013).

Community building: Facilitate classroom dynamics that open opportunities to share, discuss and explore different points of view using diverse approaches to enhance student engagement (Serwatka, 2005; Schaeffer, 2010). The instructor’s facilitation of this process is key to promote students’ sense of belonging and make them feel as part of a community of learning, which are influential aspects in online retention (Muljana & Luo, 2019). To be effective in the classroom, instructors of online classes need to take the time and extra effort to engage students with

thought-provoking questions and create a safe environment where students feel valued and open to share their ideas and collaborate with others (Crawley et al., 2009; Moreland & Saleh, 2007). The use of technological tools such as discussion forums, chats, and videoconferencing could be an effective way to facilitate and encourage peer interaction within an online course (Drouin, 2008; Poellhuber et al. 2008).

Instructor readiness

Professional development: Provide professional development focused on online course design (Angelo, 2007), the use of technological tools (Roughton, 2011), and online learning in general to increase understanding of online students and the particular nature and challenges of online education (Lee & Choi, 2011). During the program, instructors become familiar with pedagogical theories linked to effective online learning and gain theoretical insights on student engagement and retention (Muljana & Luo, 2019). Additionally, professional development could focus on unpacking online students' needs (Harris et al., 2011) and offering strategies on how to promote dynamic class discussions along with the use of meaningful feedback (Gaytan, 2015), and select the most suitable instructional strategies and technology for their courses (Parkes et al., 2015). Instruction on the appropriate selection and use of technology is important to avoid distractions that might negatively affect learning and teaching online (Fein & Logan, 2003). Online instructors need to be comfortable with the technology and be able to use it to create successful learning experiences. Thus, it becomes necessary to provide sufficient instruction for instructors on the most current technologies (Kebritchi et al., 2017). The relevance of a well-designed professional development plan for online teaching cannot be emphasized enough, as it can greatly help contain attrition and increased retention rates in online classes/programs (Kate, 2009; Levine & Sun, 2002; Ray, 2009).

Peer-mentoring program: Pair up instructors who have completed the professional development and have taught online with soon-to-be online instructors (Parkes et al., 2015). Novice instructors could observe senior and seasoned online instructors during their sessions in combination with specific professional development on online pedagogical instruction to assure that they understand how students learn and what they will need to do to engage them in their courses (Choi & Park. 2006).

Instructional and technological support: Offer flexible and ongoing instructional design and technological assistance (Blau et al., 2017). This strategy might not only complement, but also reinforce the application of the training's key insights through course design and development practices (Boston et al., 2011). Moreover, instructors who engage in instructional support could discuss any technological questions with the support personnel to inform their selection of instructional strategies appropriate for their courses (Parkes et al., 2015). This collaborative effort could yield effective course structure, engaging instructional materials (Garratt-Reed et al., 2016; Leeds et al., 2013), and well-designed assignments (Fredrickson, 2015). These are all beneficial elements in scaffolding motivation and active learning and ultimately, affecting positively online student retention and success (Pittenger & Doering, 2010).

Concluding remarks

While the scope of this report mainly revolves around four key institutional factors that influence online retention, it is essential to reiterate the complex and inter-correlated nature of students' dropout decisions. Rather than positioning individual characteristics at the centre of this document and assuming that persistence issues are anchored on a "deficit" to cope with the social and academic demands of the online environment, this work offers a slice, albeit arbitrary, of the retention phenomenon. Long-term planning to address retention issues online might need to adopt a more comprehensive approach that deals explicitly with contextual factors such as financial issues (Parkes et al., 2015) and takes into consideration how the interaction between personal, institutional and contextual factors influences students' decisions to persist or discontinue online courses or programs.

Future analyses could also explore how socio-technological barriers (such as Internet connectivity, ownership/sharing of devices and digital literacy) relate to and interact with other social and educational barriers, influencing the ability to persist among students who experience disadvantage, such as learners from First Nations communities and students from rural areas (Prayaga et al, 2017). For instance, Indigenous students in Australia reported two retention barriers that related to social and cultural dimensions of living in remote communities, namely, accessing and using the Internet at home, and the isolation of online learning (Prayaga et al, 2017). Difficulties securing regular access to computers and lack of familiarity with online learning platforms were also reported by Indigenous students in Canada (Ball, 2007). By calling attention to students' differential needs in the online environment, tailored interventions could address prospective equity issues. Such issues could potentially emerge during the implementation of a transition to online learning that perhaps is better suited to respond to traditional students' expectations.

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Appendix A: Figures

Figure A: Composite model of student persistence in online distance education

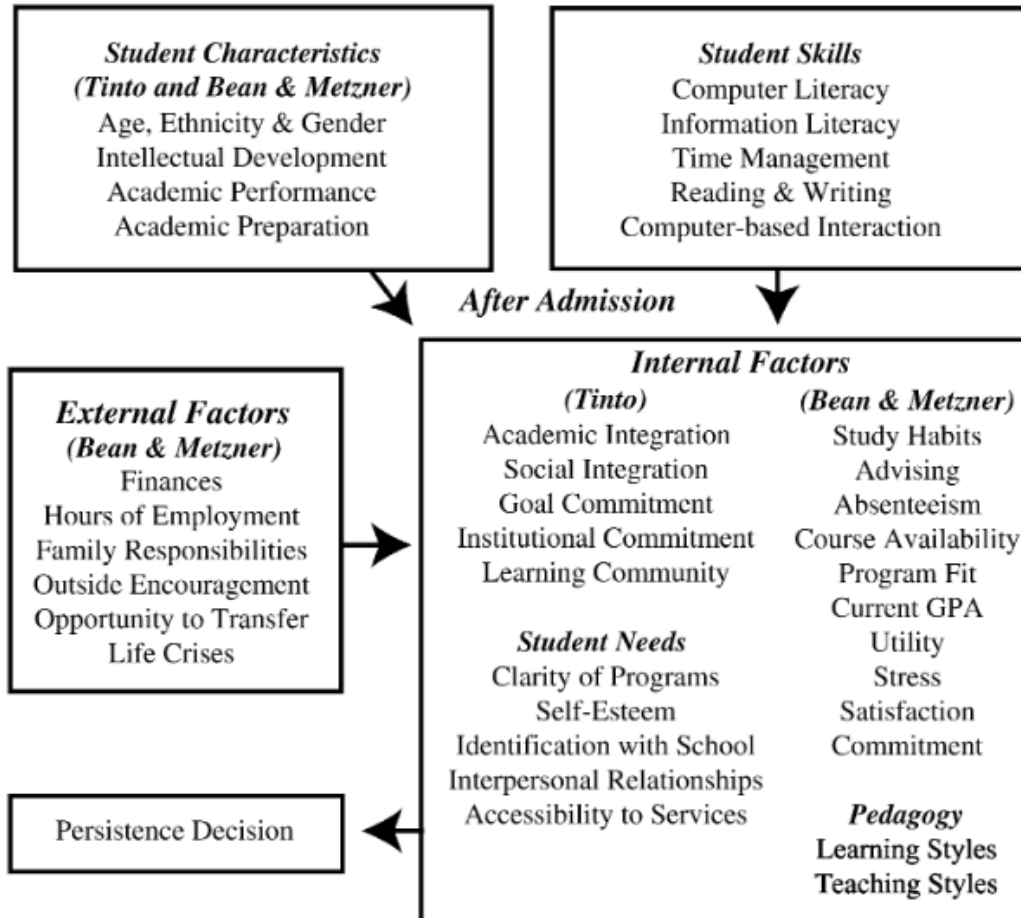
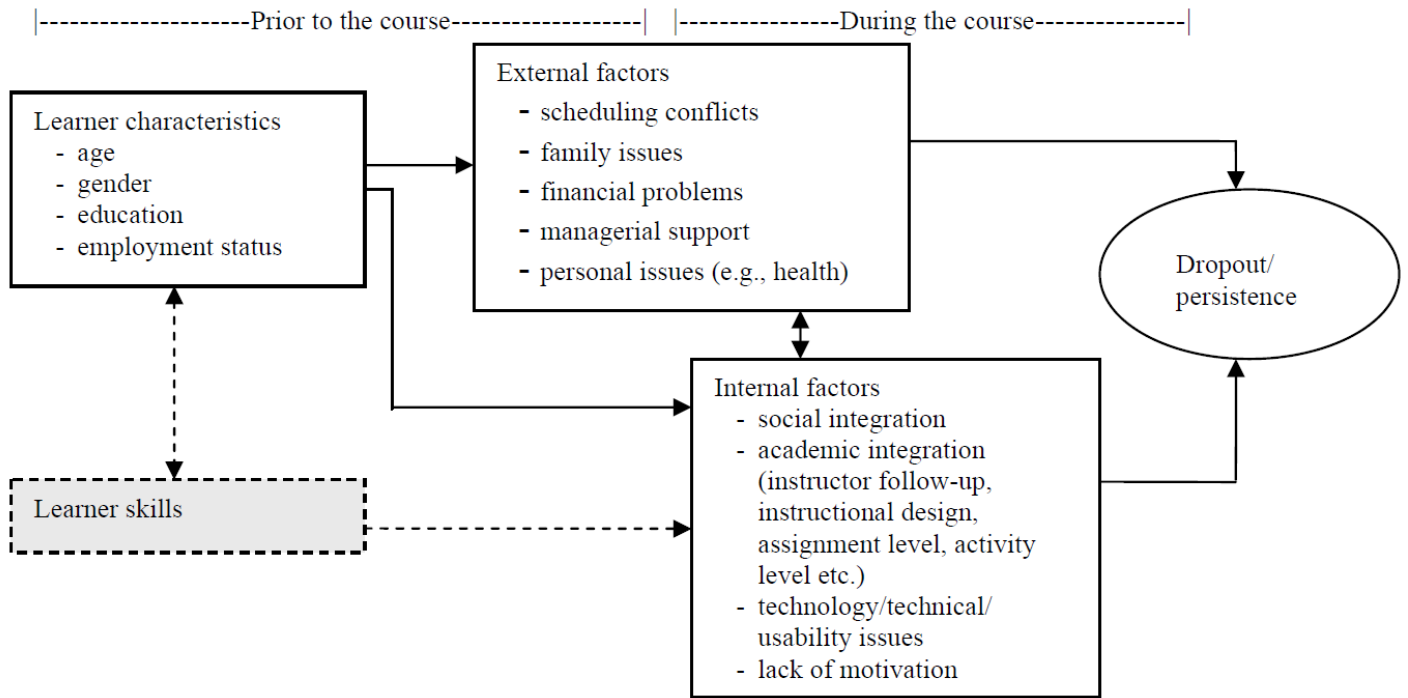


Fig. 3. A composite persistence model that synthesizes the persistence models of Tinto (1975, 1987, 1993) and Bean and Metzner (1985) together with relevant research in online student skills (Rowntree, 1995; Cole, 2000) and needs (Workman & Stenard, 1996) and the requirement to harmonize learning and teaching styles (Grow, 1996) to explain student persistence in online distance education programs.

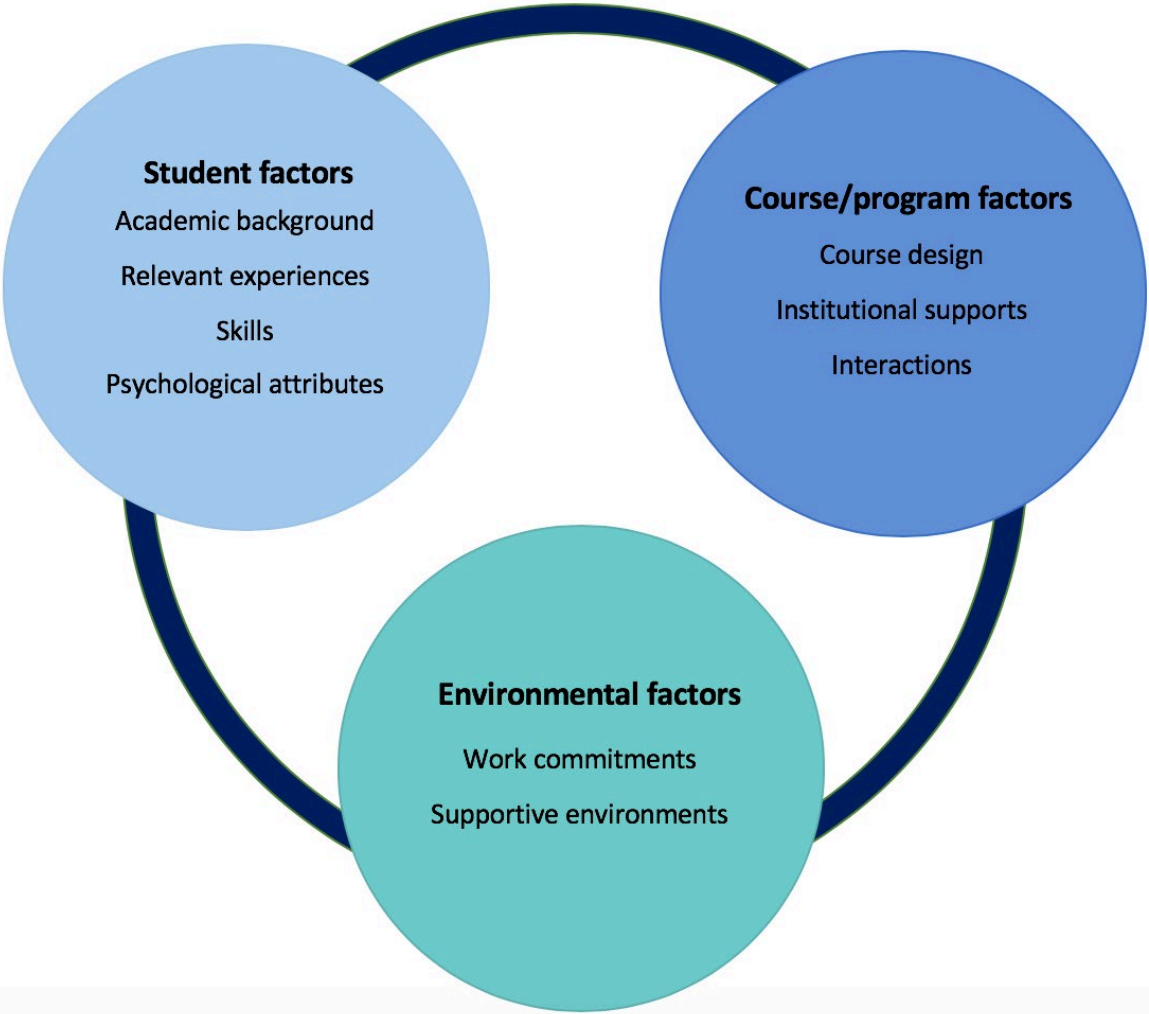
Source: Rovai (2003)

Figure B: Theoretical framework for adult dropout in online learning



Source: Park (2007)

Figure C: Dropout factors



Source: Lee & Choi (2011)

ONLINE RETENTION REVIEW REPORT

Presentation to the Teaching Online Task Group

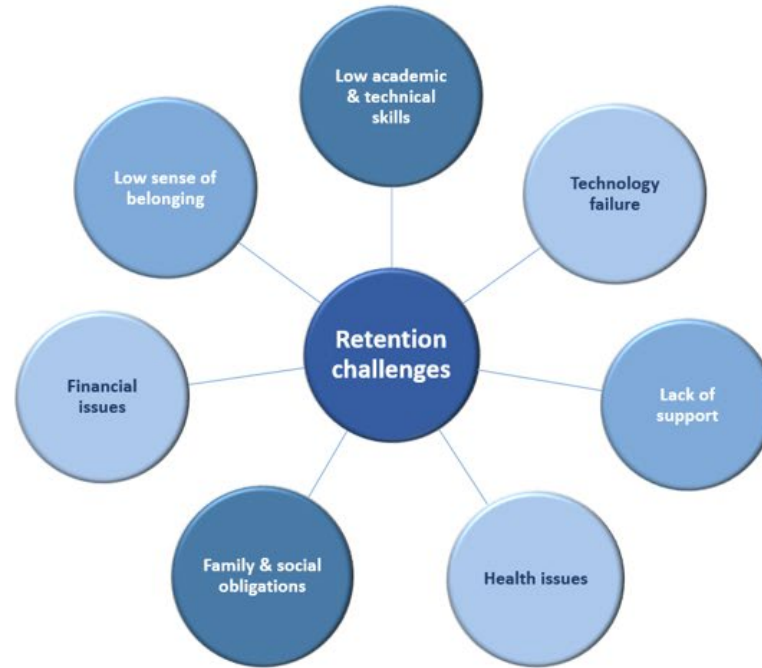
Viviana Pitton, PhD
August 6th, 2020



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Online retention challenges



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Limitations of the literature reviewed

- *Contextual crisis*: The online learning experiences reported in the studies did not take place during a pandemic
 - **Likelihood of unforeseen retention challenges**
- *Temporality differences*: The educational experiences reported in the literature were designed to be online
 - **Experiences not fully comparable to UVic's emergency shift online**
- *Student characteristics*: Most of the research examined has a narrow population target not strictly comparable to UVic students
 - **Insufficient consideration of typically underserved students' needs**



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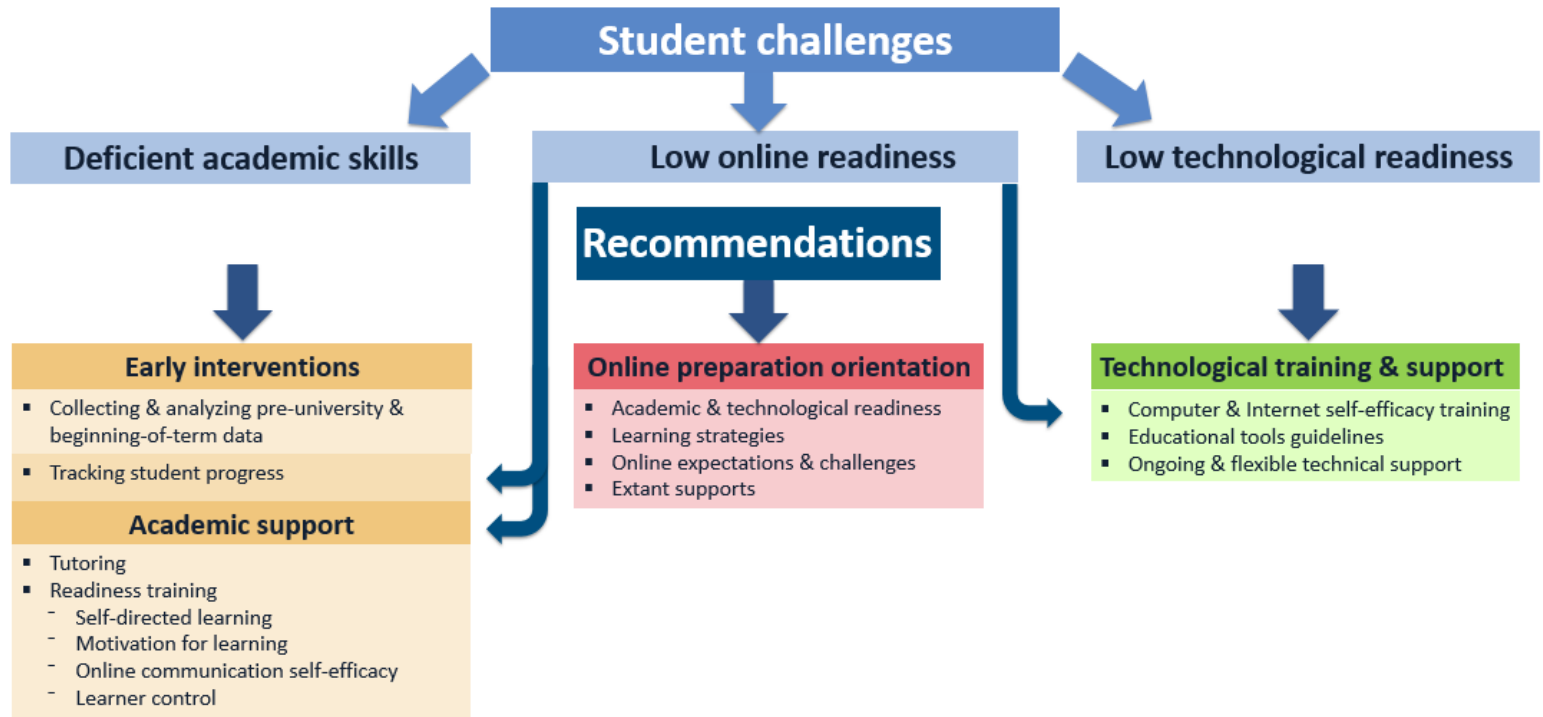
Online retention: Influential institutional factors



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Student support services





Quality curriculum

Curricular challenges

Unclear organization

Difficult-to-locate materials

Irrelevant course elements

Inadequate assignments

Vague expectations

Recommendations

- Logical course structure

- Easily accessible instructional materials

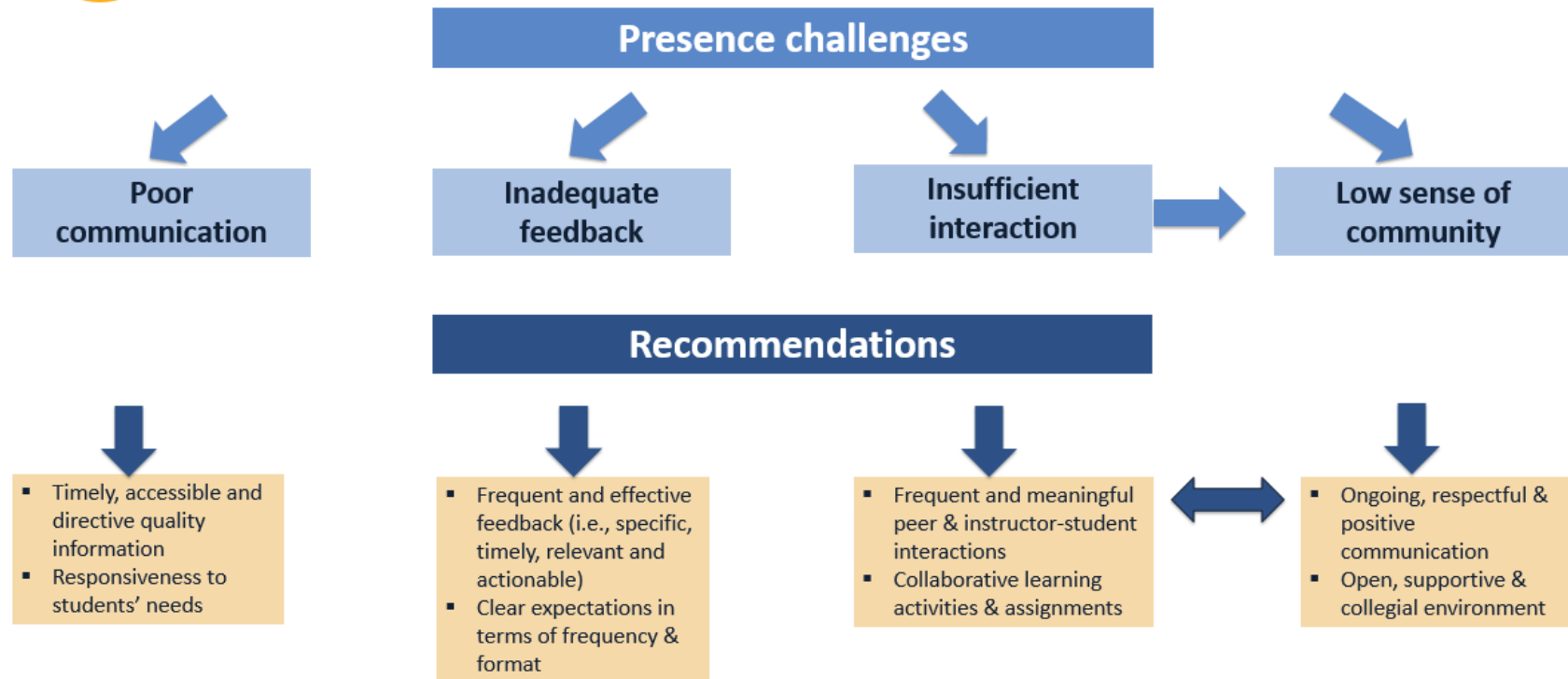
- Engaging course content & materials
- Connection between course content and students' lives/future career

- Scaffolded and active learning activities
- Varied assessments suitable for online learning

- Clear & multimodal instructions



Student experience & instructor strategies





Instructor readiness

