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External Factors Explaining Students' Persistence in Online Courses in Higher Education: A Study Among Two French-Speaking Universities in Canada

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Abstract

The aim of this study was to verify if external factors influence persistence in online courses in higher education. These external factors, borrowed from Kember's (1995) model, included some students' characteristics; cost benefits; social integration of adult students (enrolment encouragement, study encouragement, and family support); and external attribution (insufficient time, events hindering study, and distractions). Data were collected among a sample of 835 students from two Canadian French-Speaking Universities ($n1$ = 468 from University One and $n2$ = 367 from University Two) using an online questionnaire. The questionnaire included items borrowed from The Distance Education Student Progress (DESP) inventory (Kember et al., 1992). The multiple linear hierarchical regression analysis revealed that students' characteristics and some of the external factors had an effect on students' persistence in online courses and that the most important factor in predicting students' persistence is cost benefits. These analyses were also conducted by university, gender, and age groups. Except for cost benefits, the results indicated different patterns of strength and significant relationships between groups.

Keywords: persistence, online courses, external factors

Introduction

Over the past two decades, the number of online courses has grown considerably in higher education (Myers & Schiltz, 2012; Shea & Bidjerano, 2013). This is illustrated by the enrollment numbers in higher education institutions offering such courses as well as the increasing worldwide market for online courses products and services. For example, a recent report by Allen et al. (2016) revealed that in 2014, a total of 5.8 million students were registered in online courses in the United States alone. Lee et al. (2013) added that the global market for online courses products and services reached over $27.1 billion in 2009 and was expected to balloon to $49.6 billion by 2014. The growth of these courses is due to several factors. First, they meet the demands of students who desire flexible course schedules, especially those of adult students. Also, they give students better access to higher education; these students would not attend face-to-face courses because of family and/or work responsibilities, not to mention their distance from higher education institutions. Finally, they significantly decrease their educational costs. Indeed, these students would no longer need to travel to attend face-to-face sessions yet would still benefit from direct or indirect contact with the teacher and with other students (Wang & Hsu, 2008). Moreover, online courses provide higher education institutions with some financial benefits (Gosmire et al., 2009; Yoo & Huang, 2013) and they appear to be at least as effective as face-to-face courses. An often-cited meta-analysis of 232 comparative studies conducted by Bernard et al. (2004) concluded that, overall, online courses and face-to-face courses are comparable on some student outcomes (academic performance and satisfaction). However, these results also revealed great variability. Furthermore, promising news has been reported by a meta-analysis of 51 studies comparing students enrolled in online courses and face-to-face courses (U.S. Department of Education, 2010). The study revealed that academic performance was higher for online students as compared to those registered in face-to-face courses.

That said, several studies have reported that persistence rates in online courses are very low. According to Kranzow (2013), they range from 30% to 50%. In Europe, persistence rates vary from 70% to 80% while in Asian countries, these rates may be as high as 50% (Xenos et al., 2002). It should nonetheless be noted that there is a problem with reporting exact rates, as the definition of persistence varies from one author, institution, and country to another. Nevertheless, online courses show lower persistence rates than face-to-face courses (Cho, 2012; Lee & Choi, 2011; Lee et al., 2013; Park & Choi, 2009). Student persistence in online courses is perceived as one of the biggest weaknesses of this course delivery mode (Herbert, 2006). Moreover, dropout from online courses is described as a difficult and embarrassing phenomenon (Levy, 2007) as research on online courses indicates that students' dropout experiences lower their confidence in learning and cause failure, social isolation end economic loss (Lee et al., 2013). Thus, with the exponential increase in the number of online courses in higher education, student persistence in these courses is of great concern.

Higher education institutions have done much to make academic students enrolled in online courses feel at least as satisfied as those registered in face-to-face courses. The idea has been to encourage persistence and higher student academic outcomes. The drivers of student persistence in online courses within higher education have been studied by some authors and have been defined in some models. Regarding studies on this matter, Lee and Choi (2011), in a review, classified these factors into three categories: (a) those related to students (academic background, relevant experiences, skills, and psychological attributes); (b) those related to

courses and programs (course design, institutional support, and interactions) and (c) those related to the environment (work commitment and supportive environment). In another review conducted on studies in the field of nurse education, Gazza and Hunker (2014) grouped these factors into three categories: (a) Social presence, (b) Program and course quality, and (c) Individual student characteristics. The best-known models for this purpose are the Longitudinal-Process Model (Kember, 1995; Kember et al., 1992) and the Composite Persistence Model (Rovai, 2003). In these models, built on earlier models (Bean and Metzner, 1985; Tinto, 1975), student persistence is explained, among other things, by students' characteristics, external attributions, and academic and social integration. However, in most of these studies, the determinants are considered in isolation, preventing researchers from verifying their combined effect on persistence in online courses in higher education, and their effects on one another. Moreover, few empirical studies have used large enough sample sizes to generalize their findings. Thus, the aim of this paper is to contribute to filling this knowledge gap by also taking into account factors derived from conceptual models for adult students' persistence, and a large data set drawn from multiple online degree programs and from two universities. More particularly, external factors were considered in this study. These included some students' characteristics, cost benefits, social integration of adult students (enrolment encouragement, study encouragement, and family support), and external attribution (insufficient time, events hindering study and distractions). These external factors were borrowed from Kember's (1995) model.

Methodology

The data used in this study were obtained from two French speaking universities in Quebec, Canada. During the final five weeks of the 2016 winter semester, 835 students completed an online questionnaire on a voluntary basis ($n1$ = 468 from University One and $n2$ = 367 from University Two). Among these students, there were 227 men and 339 students aged 25 years and younger. The questionnaire included closed-ended and open-ended questions. The closed-ended items were rated on a seven-point Likert-type scale (from *1 = strongly disagree* to *7 = strongly agree*). These items were borrowed from The Distance Education Student Progress (DESP) inventory (Kember et al., 1992), and translated to French. The English version of the DESP is available in Appendix A.

Results and Discussion

The first step of the data analysis was to assess reliability by means of a confirmatory factor analysis and item loadings. The results showed that item loadings were strong (>0.5, as recommended by Nunnally [1978]), except for four items that we dropped from the cost benefits (CB3) and distraction (D3, D4, D5) constructs. As shown in Table 1, the Cronbach Alphas for all constructs were satisfactory, as they were greater than 0.7 (Nunnally, 1978), except for study encouragement, family support, and distractions.

In order to examine the relationships between respectively cost benefits, enrolment encouragement, study encouragement, family support, insufficient time, events hindering study, and distraction on the one hand and persistence on the other hand, multiple linear regression analysis were run. The multiple linear hierarchical regression analysis revealed that students' characteristics and some of the external factors had an effect on students' persistence in online courses. These analyses were also conducted by university, gender, and age groups. These results are presented in Table 1.

Table 1

Results of Multiple Linear Regression Analyses

	Cronbach Alpha	The whole sample n = 835	U1 n = 468	U2 n = 367	Gender1 n = 227	Gender2 n = 608	Age1 n = 339	Age2 n = 496
		β	β	β	β	β	β	β
Costs benefits	.78	-.31**	-.35**	-.27**	-.21**	-.33**	-.35**	-.29**
Enrolment encouragement	.89	-.00	.03	.02	-.17*	.06	.04	-.03
Study encouragement	.65	.09*	.13**	.04	.19**	.07	.13*	.08
Family support	.53	.05	.04	.06	.13*	.00	.01	.06
Insufficient time	.84	-.11**	-.11*	-.09	-.02	-.16**	-.03	-.15**
Events hindering study	.74	-.09*	-.11*	-.08	-.26**	-.04	-.16*	-.06
Distractions	.64	-.09**	-.04	-.15**	-.07	-.09*	-.04	-.11*
F		27.72**	18.14**	10.85**	9.05**	21.45**	12.94**	16.27**
R^2		18.8%	21.4%	15.9%	20.5%	19.6%	20.4%	18.2%

Notes:

1. U1: University 1; U2: University 2; Gender1: Men; Gender2: Women; Age1: students of 25 years and younger; Age2: students of 26 years and older.
2. β: standardized beta.
3. *: $p<.05$; **: $p<.01$.

The most important factor in predicting students' persistence in online courses in higher education is the one that is significant for the whole sample and all the other subgroups: cost benefits. This factor has had a positive effect on persistence. For the other factors, the results indicated different patterns of strength and significant relationships between groups.

Higher education administrators and faculties could work on these factors, and especially on the cost benefits factor, by making the online courses more interesting, and by demonstrating the relevance of these courses in the program and in the development of skills needed in the job market. Active learning communities of inquiry could also be encouraged in online courses in order to enhance students' engagement and persistence.

Factors on social integration of adult students (enrolment encouragement, study encouragement, and family support), were more important for some subgroups of students than for other. For men, the three factors were significant, but the same was not true for women. External attribution factors (insufficient time, events hindering study, and distractions) were more important for women and for older students than for men and younger students. For this matter, online courses should be more flexible in order to allow students to complete assignments and activities when they have time, as adult students have to deal with several constraints due to family and professional activities.

Relevance to the Conference Theme

The implementation of online learning in higher education institutions in the coming years in Quebec and Canada is an important issue, since these courses are significant for the future education institution development, on the one hand, and they respond to adult students' needs for accessibility (conference key subtheme of "access") and flexibility, on the other. Given that persistence rates in these courses are low, the results of empirical studies on factors explaining persistence will give administrators and teachers some guidance on how to avoid dropout by pinpointing factors that could explain persistence. Moreover, some orientation activities could be developed for students based on knowledge of these factors.

Author's Contributions

SL was the principal researcher in this project. She supervised all the steps of the research: conception and design of the work, data collection, analysis and interpretation of data and writing. GH has substantively revised the manuscript. HK supervised the conception and design of the work, and data collection. All authors read and approved the final manuscript.

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Ethics Statement

For the purpose of this study, ethical authorizations were requested and obtained from the research ethics committees of Université Laval and Université de Sherbrooke where data collection took place (UL-2016–035 and CER-ESS 2015–31).

Conflict of Interest

The authors do not declare any conflict of interest.

Data Availability Statement

Materials used in the study can be made available upon reasonable request.

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Appendix A

Costs benefits (CB)
CB1: As I continue with my online course work, I continually weigh the pros and cons of the costs of staying in the online program.
CB2: As I continue taking online courses, I continually ask myself if the financial cost is "worth it" to continue.
CB3: The benefits of continuing with my online education outweigh the financial sacrifices made[1].
Enrolment encouragement (EE)
EE1: My spouse encouraged me to enroll in this online course.
EE2: My family encouraged me to enroll in this online course[1].
EE3: My employer encouraged me to enroll in this online course.
EE4: My friends encouraged me to enroll in this online course.
Study encouragement (SE)
SE1: My employer was supportive while I was studying.
SE2: My spouse offered support while I was studying[1].
SE3: My workmates encouraged me to study.
SE4: My family encouraged me to study because they thought the qualification was important.
Family support (FS)
FS1: I usually spend a lot of time with my family.
*FS2: I don't need the support of my family to succeed in this online course[1].
FS3: The support of my family means a lot to me.
Insufficient time (IT)
IT1: As I work long hours it is difficult to find time to study.
IT2: Long hours at work left little time for study.
IT3: I seem to have so many other things to do there is never enough time for study.
IT4: A change in my work left me without enough time for study.
Events hinder study (EHS)
EHS1: A change to my work situation made it difficult to complete this online course.
EHS2: I was ill during this online course, so found it difficult to keep up.
EHS3: Personal/family circumstances, unseen at the time of enrollment, hindered my studies.
Distractions (D)
D1: I prefer to spend time doing things other than studying.
D2: I have a busy social life[1].
D3: I went out a lot, rather than studying.
D4: My spouse became annoyed because I spent so much time studying[1].
D5: My children interfered with my studies[1].
* D6: I do not let anything interfere with my studies.
D7: My friends wanted me to go out rather than study[1].
Persistence (Pers)
Pers1: I am very determined to finish this online course.
* Pers2: I often consider dropping out from this online course.
* Pers3: I often wonder whether all the study is worth the effort.

Notes:
*: the scale was reversed for the analysis.
[1]: The item was excluded from the analysis.