Enhancing Student Retention in Online Courses: Fact or Folly?

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ABSTRACT

There is a thrust among universities to provide a flexible learning environment and diversify methods of teaching and delivery for students. The increasing popularity of online learning programs has generated much interest among both practitioners and researchers, particularly with regard to the predictors of learning outcomes. This study examines the effectiveness of various policy-related interventions aimed at increasing student retention in online programs. Data was gathered from a live online program to support an initial report on the effectiveness of these interventions. The analysis examines the trends of student non-completion in an online program following the implementation of policy interventions. The results indicate that many widely held "best practices" in student retention have very little support from the data. The discussion considers some explanations for why the data do not support the dominant theory about these "best practices".

Keywords
Online Course, E-Learning, Intervention

1. INTRODUCTION
Learning outcomes in online learning programs have been an issue of concern since the ascendance of online learning as a viable alternative to traditional and "distance" education. Specifically, educators and administrators of online programs are challenged to deliver the same level of quality through an inherently "less-rich" medium than the more "traditional" forms of education, such as face-to-face delivery. Although there are many types of learning outcomes that are potentially affected, one of the most immediate and directly measurable outcomes is retention, or more specifically, whether or not a student completes the courses or programs in which they enroll. While the definition, operationalization, and measurement of most other learning outcomes may be limited by a certain degree of subjectivity - for instance, whether or not a certain type of assessment really assesses the learning in question - by logical definition a learning outcome will most likely not be achieved by a student who withdraws or does not complete a course.

Therefore, retention and non-completion become a critical concern in that they represent an obstacle to the achievement of all other learning outcomes that may follow in the successful completion of an online course or program. Non-completion, however, is a multi-faceted phenomenon, and there are many reasons why a learner may not complete a course in which they are enrolled. "Best practices" for student retention have become common in online learning theory and practice, many of which were implemented and accepted in an ad-hoc fashion on account of the rapid growth of online learning, and typically address a single type, or a few types of threats to non-completion. As is often the case for ad-hoc practices, although there may be a strong tradition of "conventional wisdom" to accept them, there is not always a strong theoretical reason for explaining why a "best practice" may work, or follow-up research to verify that they really do [4].

Therefore, it is the goal of this research to investigate the effect of various common "best practices" in student retention for online programs. The research question that will guide the investigation is:

RQ: Do the various "best practices" commonly used in online programs have the desired effect?

2. LITERATURE REVIEW
2.1 Introduction to Literature Review

A number of aspects in the literature have a degree of relevance to this paper including the effectiveness of eLearning; the importance of pedagogy, context and communities in eLearning; well established learning theories surrounding the learning of adult and/or mature students; and some New Zealand context surrounding the issues of student retention. In the following sections these concepts are briefly reviewed and their importance to this paper is highlighted.

2.2 Effectiveness of eLearning

Although many researchers and practitioners are enthusiastic about the potential of online learning, there has been some very credible evidence which suggests that online learning suffers from handicaps that hurt learning outcomes. There is a "no significant difference" phenomenon [15] that seems to haunt the online vs. face-to-face research. Specifically, he writes about the problem that so many studies report results that are either insignificant or

trivial, which, when combined with the hundreds of studies that could not be published because they report either no significant difference or negative effects, raises the issue that there may be nothing there. There simply is no good theory that would explain why we should expect better results in online or "distance" courses than for the same face-to-face courses, all other things being equal. Previous research which examines the body of literature comments on the inconsistent, contradictory and trivial results and also poor quality of research on the topic [1,2,14]. Media Richness Theory, which has only entered the research recently, would seem to predict that, all other things being equal, we should expect 'inferior' outcomes from online learning compared to face-to-face, since different media have differing capabilities to support the delivery of rich messages, and online media support less "richness" than face-to-face communication [17]. Much of the recent research capitulates to the notion that it is possible for online to achieve 'similar' learning outcomes, while slowly abandoning the notion that superior outcomes may be expected [1, 2,14]. Although seldom acknowledged as the driver behind the implementation of best practice, the very existence of best practice for online learning that does not apply to the "traditional" classroom is a tacit acknowledgment of the challenges that threaten learning outcomes in online learning environments.

2.3 Importance of Pedagogy, Context and Communities in eLearning

Previous research provides a model for the characteristics of effective learning [7], as summarized in Table 1, which may be used to analyze whether the learning activities that take place within a particular context constitute effective learning. In this study, the "context" of learning is the online environment, and all of these characteristics apply in the online environment much as they do in other contexts, although perhaps they may be manifested differently.

Table 1 –Characteristics of Effective Learning [7]

Characteristic of Effective Learning	Brief Description
Active	Learning includes a combination of cognitive activity and psychomotor activities, with the combination of these contributing to create personalised learning that is more meaningful to the learner.
Cumulative	Utilising previous learning is significant in enabling learners to make sense of new information; create links between old and new ideas and to enhance existing knowledge
Individual	All learners are different in the way they learn and in the past experiences they bring to each new learning experience
Self-Regulated	At advanced levels learners can have an awareness of how they learn best and as a consequence can organise aspects of their own learning, in particular how the learning fits into different contexts
Goal Oriented	Learners need to see why they are doing what they are doing and how it contributes to some sort of overall goal

Research has also proposed (Table 2) a model of authentic learning activities [8]. This model is relevant because it provides both a means to refine the model of effective learning reported in Table 1, and a focal point for the interpretation of the results. These activities are embedded in the learning context, in the case of this study the online environment, and are therefore appropriate for the goals of this research.

Table 2 – Authentic Learning Activities [8]

Include real world relevance
Require students to define the tasks they need to accomplish
Include tasks that need investigating over a period of time
Provide opportunities to examine the tasks from different perspectives
Provide opportunities to collaborate and reflect
Have potential integration across different subject areas
Have seamless integration with assessment
Create products and artefacts that are useful in their own right
Have diversity of outcomes

Understanding the context of learners is paramount to developing online course material that will be relevant to the students using it [10, 11]. Furthermore, knowledge of context is instrumental in the design and development of communities of learners, particularly as it pertains to the design and development of course materials [13].

2.4 Learning Theories Relating to Adult Students

Andragogy [9] and Adult Learning Theory [6] both specifically concern adult learners, and are therefore relevant to the goals of this research. Both theories tap into the prior experience and knowledge of the students. Since prior experience is a critical differentiator between adult students and "traditional" students, a high level of importance should be placed on aspects related to Andragogy and Adult Learning Theory when designing and implementing online programmes of study where there are high proportions of adult and/or mature students enrolling.

In the context of this study, learning theories, authentic learning activities, and characteristics of effective learning are relevant because they will provide an interpretive standard by which "best practices" may be evaluated as effective learning outcomes.

2.5 New Zealand Context

A number of studies conducted in recent years in a New Zealand context have focused on student retention, completion and success. A major driver for many of the studies has been reports from government authorities that signal changes to how the tertiary education sector may be funded in the future. There are indications that these changes may result in some of the government funding moving to a model based partly on retention, completion and success [16,18,19].

While this study is based in the United States, a number of the researchers are based in New Zealand and the intended audience for this part of the study is New Zealand based. We are also interested in what, if anything, may be learned from this, and subsequently generalized to the New Zealand context.

As a consequence the results of this particular paper have relevance to an emerging New Zealand context where future funding may well have some dependence on the retention and completion rates of online programmes of study.

2.6 Summary of Literature Review

The literature about the effectiveness of online learning appears to indicate that we may not expect the same outcomes from online and face-to-face learning as it pertains to course completion and retention, and that some of the difference between the two may be related to the inferiority of the online medium to transfer the richness of information being delivered.

Issues surrounding the importance of pedagogy, context and communities in online learning scenarios should receive continuing attention, particularly for situations where the cohort of students studying in an online setting may be different from another cohort of the same students studying in a face-to-face setting. Specifically, in the context of this research, it is relevant because the majority of students who enroll in online programmes are adult and/or mature students, and the majority of students in face-to-face programs are not. Finally, the results are of keen interest to tertiary education in New Zealand, since there is a high likelihood that we will continue to consider online learning as an alternative, and that retention and completion will be used as metrics for success.

3. METHODOLOGY

3.1 Sample

The online program that is the subject of this study is administered by a medium-sized private university with a total of over 16,000 students. The program is generally comparable to other online degree programs across a broad range of characteristics: regional accreditation, program policy, faculty qualifications, faculty compensation, faculty expectations, course requirements, curriculum, student demographics, student qualifications, tuition, and a number of others. The online program offers several degrees through several academic departments of the university, although a single and independent administrative unit of the university manages it collectively. Based on the demographics of the students involved and the characteristics of the university, it is assumed that this online program is adequate for the purposes of this study, specifically to capture the fullness of reasons for non-completion in online degree programs.

Data were aggregated from degree-seeking students enrolled in the online program who failed to complete a class for whatever reason after they enrolled in the class. Over 110,000 student-terms were reported for the online programs, which included over 19,000 respondents reporting over 30,000 reasons for course non-completions during the eight-year period from fall 1999 to spring 2006. A "student-term" is defined as one student enrolled in the university for one term. Students were allowed to report once per term, up to six terms per year, over the eight-year study duration. Students were also allowed to report more than one reason for non-completion, thus resulting in there being more reasons reported than non-completions.

All students who failed to complete any course(s) for which they had registered were invited to complete a short survey (< 5 mins.) that allowed them to report the reasons for their non-completion. Demographic analysis (age, gender, state, previous education, previous online education) revealed a high likelihood that the students in this program are representative of the population of online degree-seeking students (Table 3).

3.2 The Online Degree Program

The university is regionally accredited and has a thirty-five year history with non-traditional education, and since 1998 has become involved in the development, administration, and delivery of online programs. The university also maintains a well-developed traditional academic program at its home campus, and a network of satellite campuses that target adult and career-oriented students, all of which are regionally accredited. It is fair to say that the university has significant institutional experience in the administration of non-traditional and distance learning.

The university partnered with a third party to provide infrastructure, support, and marketing for its online degree programs. For each class, students receive a packet that contains a syllabus, notes and slides for each lecture, accompanying materials, and a CD that contains streaming audio-video recordings of the professor delivering a 15-minute lecture for each unit. Additional course materials and activities are also made available through a website that allows uploading and downloading of files, chat sessions, discussion forums, testing and grading, and many other education-related features.

Professors teaching in the online program are provided some basic instruction regarding the expectations for professors who teach online classes, a curriculum guide for their particular course, and a packet of pre-developed teaching materials. The university maintains quality control policies for online professors that require faculty to maintain certain standards, such as response times for student inquiries, weekly discussions and chats, student engagement, and various communication policies which on the face seem to be aimed at alleviate the inherent "unrichness" of communications in the online environment [17]. These quality control policies are the operational definitions of the interventions that are the subject of this study. Professor effectiveness for online courses is monitored by the university's administrative unit for online programs with respect to these policies.

Courses are eight weeks long, and typically consist of two units of instruction per week. There are a total of six terms per academic year. The content of online courses is monitored by the faculty in the traditional programs to ensure that their consistency and integrity is roughly equivalent to the same courses in the traditional programs, and also because it is necessary in order to maintain their regional accreditation. The university sees itself as an industry leader in the delivery of online education.

Across the years in which the data was gathered a number of interventions were introduced with these being based on quality benchmarks. These interventions were separated into six groups:

- Institutional Support
- Course Development
- Teaching and Learning
- Course Structure
- Student Support Benchmarks
- Faculty/Staff Benchmarks
- Evaluation and Assessment Benchmarks

The specific interventions are shown in Table 5, Table 6, Table 7, Table 8, Table 9, Table 10 and Table 11 respectively in the appendix to this paper.

3.3 Survey Development

The survey was developed by a team of experts, all of whom possessed significant experience in online education, and were intimately involved in this specific online degree program. A list of reasons for non-completion was developed based on both the existing literature and the prior experience of the researchers. Respondents were allowed to report "other" in case their reason was not already represented in the existing survey.

The survey employs the "check all that apply" approach to ensure that all significant reasons for non-completion are captured by the study. Respondents were also allowed to provide a detailed explanation of their reason for non-completion, if desired. This allowed a judgment to be made with respect to whether or not the survey provided adequate reasons to explain each respondent's non-completion, or whether the study was limited in this respect.

After data had been collected for one term, a pilot analysis determined that the survey was adequately capturing the full range of reasons for non-completion, and an inspection of the reasons given for the "other" category indicated that no statistically significant categories had been omitted. The threat to the study with respect to whether or not the survey provided adequate reasons to explain non-completion was judged to be minimal. The

survey therefore demonstrated adequate validity for the purpose of ongoing data collection.

Furthermore, the pilot study assessed the demographic characteristics of the learner population. Since the length of the survey was restricted by institutional policy, continuing analysis of population demographics was not feasible. It is assumed that the demographics of the sample drawn for the pilot study is representative of the sample frame throughout the duration of the study, and no further threats are posed in this area.

3.4 Measurement

Operationally, when respondents offer reasons for course non-completion they are manifestly stating the *causes* of their non-completion. Furthermore, although it is seldom explicitly stated as such, when program administrators implement policies in online programs, it is implicitly understood that the implementation of policy is aimed at improving retention or other learning outcomes. Therefore, the policies and best practices under consideration for this study will be treated as operational definitions of interventions aimed at improving retention and other learning outcomes. Since most of the interventions were implemented between the 2001 - 2002 academic year, the Fall 2001 term serves as a control term in which the interventions under consideration had either not been implemented, or only partially implemented. A basic theory suggests that non-completion rates going forward should decline on account of the interventions.

Variance in enrollments and number of non-completion between terms is controlled by examining the relative proportions of students in the program who are characterized by each variable of interest, in this case, the reasons for non-completion. For instance, the program-level measure of "personal/ family issues" is formed by calculating the proportion of students who reported that as a reason for non-completion. In this manner, proportions were computed for each variable in the study, and then regressed across the 21-term duration of this study.

Respondents were allowed to report once per non-completion. The survey allowed multiple reasons to be reported as necessary in a "check all that apply" format. It is noteworthy that 72% of respondents reported only a single reason for non-completion. Hence, the proportions reflect the ratio of any given non-completion reason to the total number of reported reasons, rather than the total number of individuals. Since the goal of this research is to provide a preliminary analysis of retention interventions, and the proportions represent program-wide non-completions, and only 28% of individuals participating in the study reported multiple reasons, the threat posed by allowing individuals to report multiple reasons was judged to be minimal.

4. ANALYSIS AND DISCUSSION

4.1 Student Characteristics

In the pilot phase of the study, descriptive data was collected from a subset (n = 108) of the study population for the purpose of initial instrument development and to gain an understanding of the general characteristics of the student population. Descriptive data were not collected from all respondents on an ongoing basis in order to keep the survey as short as possible for the respondents. Since this study was not concerned with any demographic or descriptive variables, this was not considered to be a limitation of the study. Of the 108 participants in the development stage, 45%

(n = 49) were male, and 55% (n = 59) were female. With regard to their motivation to enroll in an online program, 6% (n = 7) did so because it was a job requirement, 10% (n = 12) were pursuing job training, 45% (n = 53) were engaged in self development, 31% (n = 37) were preparing for a job or career change, and 8% (n = 9) had other reasons for enrolling. With regard to their means of financial support, 12% (n = 12) were receiving unconditional support from their employer, 43% (n = 45) were receiving support from their employer that was conditional upon receiving a passing grade, and 45% (n = 47) provided their own means of support.

Table 3. Sample Demographics

N	108
Age	
20-24	8%
25-29	16%
30-34	15%
35-39	19%
40-44	20%
45-49	12%
50-54	7%
55-59	3%
60+	0%
Gender	
Male	45%
Female	55%
Degree seeking	96%
Previous online courses	63%
Purpose of enrollment	
Job requirement	6%
Job training	11%
Self-development	83%
Financial support	
Personal	49%
Job – unconditional	12%
Job – conditional on grade	43%
How many classes?	
1	42%
2	55%
3	3%
4	1%
How many hours work per week?	
<10	6%
10 – 20	5%
21 – 30	3%
31 – 40	21%
41 – 50	45%
>50	20%

4.2 Non-completion Data

The study observed an overall 12% (s>=19,000, n = 112,428) non-completion rate in the online program. This is consistent with results from other studies [3,5].

The survey asked the participants to provide an explanation for their decision to withdraw from their class, and the results of this procedure was tabulated each term for 21 terms, and the proportion of non-completions was regressed against the term as the independent variable. The general hypothesis to be tested is that the interventions should cause decreases in non-completion across the duration of the study. Table 4 reports the regression coefficients, F-stats, and p-values associated with each trend across the 21-term duration of the study.

Reason for non-completion	Co-efficient	F-stat	p-value
My responsibilities at work have increased.	-0.02	0.17	0.69
Personal/family issues.	0.06	1.42	0.25
The course demands overwhelmed me.	**0.27**	**34.38**	**< 0.0001**
I registered for too many courses.	**0.17**	**10.26**	**0.004**
I was not academically prepared for this course.	0.00	0.02	0.90
I didn't have access to the necessary technology.	0.02	0.84	0.37
The course materials arrived too late.	-0.07	1.87	0.19
Illness.	0.03	0.54	0.47
I registered for the wrong course.	0.00	0.40	0.54
The course materials were unclear.	-0.04	3.43	0.08
I needed more help with the technology.	-0.01	0.51	0.48
Learning online is not for me.	0.00	0.02	0.88
I can no longer afford the tuition.	**-0.18**	**71.92**	**< 0.0001**
I felt pressured into enrolling for this term.	**-0.08**	**22.0**	**0.0002**
I did not receive Financial Aid.	**-0.08**	**12.94**	**0.002**
I had issues with my instructor.	-0.03	1.43	0.25
I missed interacting with other students.	-0.01	1.48	0.23
My previous college credits did not transfer.	-0.04	6.74	0.02
Overall	**0.12**	**11.24**	**0.003**

Table 4. Regression coefficients, F-statistics, and p-values of trends for reasons of non-completion by term

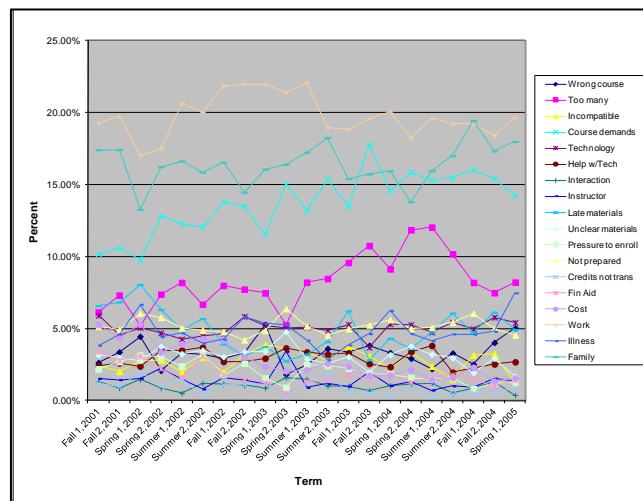Figures 1 and 2 report the trends for each reason for non-completion.

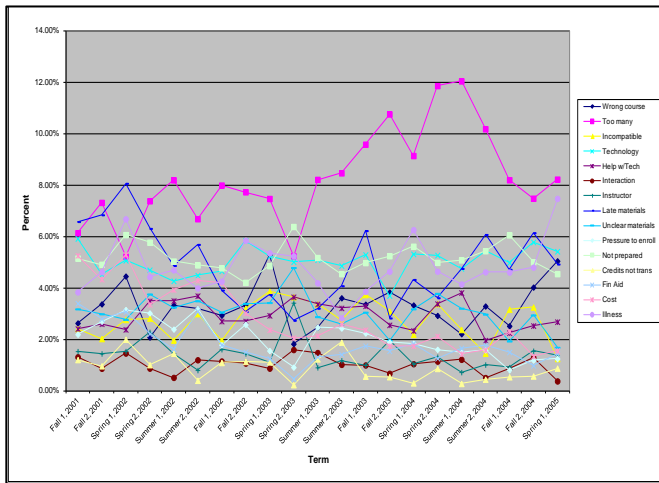**Figure 1. Non- Completion by Category**

Figure 2. Non- Completion by Term, excluding Top 3

The results indicate that the overall non-completion rate increased through the duration of the study, with a regression coefficient $\beta = 0.12$ ($p = 0.003$). Two specific trends, "the course demands overwhelmed me", and "I registered for too many courses" both demonstrate increasing rates of non-completion, with $\beta = 0.27$ ($p < 0.0001$) and $\beta = 0.17$ ($p = 0.004$), respectively. Three trends demonstrated a decrease in non-completion rates: "I can no longer afford the tuition" ($\beta = -0.18$, $p < 0.0001$), "I felt pressured into enrolling" ($\beta = -0.08$, $p = 0.0002$), and "I did not receive financial aid" ($\beta = -0.08$, $p = 0.002$).

4.3 Relevance of Quality Benchmark Interventions to Reasons for Non-Completion

The analysis of data in the previous section showed an overall increase in non-completion rates over the period of the study, with two reasons for non-completion increasing over the period and three reasons decreasing over the period. These results raise the question as to whether Quality Benchmark Interventions [12] had the desired effect.

The two reasons for non-completion that increased were "the course demands overwhelmed me" and "I registered for too many courses". This has some relationship to one of the interventions included that "….students are advised about the program to determine if they possess the self-motivation and commitment to learn…." (Intervention 10 in Table 8). However, it may be that this intervention was inadequately administered. It is also possible that, since the students in question are primarily "adult" students, that they are impeded by systematic demands on their time and ability that they do not share with "traditional" students. If this is true, another intervention that might be considered would be to allow alternative time frames for submission of work, or allowing students to submit work that is more based on their own experiences, which is consistent with some of the ideas behind Andragogy [9] and Adult Learning Theory [6]. This is also consistent with the notion of recognizing the learning context of the students [10,11].

The three reasons that appeared to decrease over the duration of the study of "I can no longer afford the tuition", "I felt pressured into enrolling for this term" and "I did not receive Financial Aid", would seem to be related to the Quality Benchmark Interventions [12] found in Intervention 14 in Table 9 in the Appendix, however, they are outside the scope of this research.

4.4 Pedagogical Considerations Relevant to Quality Benchmark Interventions

In general, the interventions that were undertaken appear to show little influence on established pedagogical considerations about effective learning [7]; the nature of learning activities [8]; the importance of context [10,11]; learning theories related to adult/mature students [6,9]. The results would seem to call into question the importance of these factors in online education and at the very least call for more research from the student point of view as this research was. If the goal of interventions is to increase learning effectiveness, and with it retention, completion, and success, then other factors need to be considered for their impact on student success in online programs. It should be noted that the single most important factor in deterring student completion is work-related (Figure 1). Perhaps a more useful intervention would be work-academic institution partnerships that promote the work being more involved in the student's success. Similarly, another significant factor in student completion is family (Figure 1). Research in the area of how family needs deter academic success would also be of value with a view to providing interventions that would enable students to complete their courses and programs.

5. CONCLUSIONS

We found that factors that were under the direct control of the faculty (with one exception) demonstrated no significant movement across the duration of the study.

The factor of "course demands overwhelmed me", was the only factor that was significant that was under the direct control of the faculty. One possible explanation for this is the admission of students who lacked the necessary qualifications into the program. Another explanation is that the faculty increased their demands and expectations over the period of the study. However this latter is not probable as the course content of online programs is closely monitored by full-time faculty to ensure consistency.

Since the overall rate of non-completion increased somewhat across the study duration, it possibly demonstrates that any positive effect conferred by some interventions was countered by the negative effect of others. Since this is an uncontrolled study, however, it is possible that factors other than the interventions may have contributed to the observed effects.

Interestingly, student interaction, a subject of several policy interventions, was not found to be significant, contrary to a wide body of literature suggesting it should be. Perhaps interaction is significant for positive learning outcomes, and not significant for negative outcomes in terms of course completion. It is also possible that students who choose to enroll in online programs have unique characteristics that "immunize" them from a lack of interaction by comparison to face-to-face courses. It is also possible that students may enroll in online programs because they don't want to interact with other students or the professor. In other words, their desire is to get a description of the work to be done, the deadlines, and expectations, so they can do it at their own leisure, with limited or no interaction.

The study also revealed that clarifying course materials, a policy intervention, similarly had little effect despite a body of literature suggesting that it should be a positive influence.

Also, we noted that increasing the minimum qualifications and vetting of instructors in the recruiting process, produced no significant effects observable in the "had issues with my

instructor" trend. There are two possible reasons for this. It is possible that the instructor quality has no discernible effect on non-completion. Another argument is that the faculty quality does have an effect, but either new staff recruited meet the required standards or that staff quality is not evident in a study of this nature. Given the "pre-packaged" and "standardized" nature of online courses, it is not entirely unreasonable to expect that the substitutions of faculty of varying qualities would not have an effect on non-completion or other learning outcomes.

The Quality Benchmark Interventions [12] that were used did not have a high relevance to issues surrounding pedagogy, theories of adult learning; effective learning; learning activities and awareness of differing student contexts. That is not to say that these were not considered in the design of the online programmes, however, as they were not the focus of the reasons that students gave for non-completion it is not possible to ascertain their effect. As indicated in the analysis there are many factors that are at work when students are making decision around not completing courses.

In a New Zealand setting where a shift in funding models is likely, tertiary education institutions delivering online programmes will be interested in interventions that have the potential to increase student retention and completion. The results of this study are indicating that there is no easy solution to the issue as there are many factors at play.

6. LIMITATIONS

Although the procedure employed in this study does not account for auto-regressive first-order correlations, it is sufficient to support the goals of this study to provide a preliminary investigation of the effects of interest. The specific threat going forward is that regressions will not reveal whether a trend displays concavity or convexity with regard to temporal effects. A visual inspection of the trend lines in figures 1 and 2 identify "materials arrived too late" as a potential candidate for this threat, since the trend is not significant despite there appearing to be a non-random, concave trend in the data. There are other trends that appear to exhibit concavity or convexity, but the regressions have already identified them as statistically significant. In other words, it is possible that a rigorous time-series analysis may reveal a significant trend that this study does not. This threat will be examined in a more thorough analysis as the study goes forward.

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Appendix
Quality Benchmark Interventions [12]

Table 5 - Institutional Support Benchmarks

1. A documented technology plan that includes electronic security measures to ensure both quality standards and the integrity and validity of information.
2. The reliability of the technology delivery system is as failsafe as possible.
3. A centralized system provides support for building and maintaining the distance education infrastructure.

Table 6 - Course Development Benchmarks

4. Guidelines regarding minimum standards are used for course development, design, and delivery, while learning outcomes -not the availability of existing technology - determine the technology being used to deliver course content.
5. Instructional materials are reviewed periodically to ensure they meet program standards.
6. Courses are designed to require students to engage themselves in analysis, synthesis, and evaluation as part of their course and program requirements.

Table 7 -Teaching/Learning Benchmarks

7. Student interaction with faculty and other students is an essential characteristic and is facilitated through a variety of ways, including voice-mail and/or e-mail.
8. Feedback to student assignments and questions is constructive and provided in a timely manner.
9. Students are instructed in the proper methods of effective research, including assessment of the validity of resources.

Table 8 - Course Structure Benchmarks

10. Before starting an online program, students are advised about the program to determine if they possess the self-motivation and commitment to learn at a distance and if they have access to the minimal technology required by the course design.
11. Students are provided with supplemental course information that outlines course objectives, concepts, and ideas, and learning outcomes for each course are summarized in a clearly written, straightforward statement.
12. Students have access to sufficient library resources that may include a "virtual library" accessible through the World Wide Web.
13. Faculty and students agree upon expectations regarding times for student assignment completion and faculty response.

Table 9 - Student Support Benchmarks

14. Students receive information about programs, including admission requirements, tuition and fees, books and supplies, technical and proctoring requirements, and student support services.
15. Students are provided with hands-on training and information to aid them in securing material through electronic databases, inter-library loans, government archives, news services, and other sources.
16. Throughout the duration of the course/program, students have access to technical assistance, including detailed instructions regarding the electronic media used, practice sessions prior to the beginning of the course, and convenient access to technical support staff.
17. Questions directed to student service personnel are answered accurately and quickly, with a structured system in place to address student complaints.

Table 10 - Faculty Support Benchmarks

18. Technical assistance in course development is available to faculty, who are encouraged to use it.
19. Faculty members are assisted in the transition from classroom teaching to online instruction and are assessed during the process.
20. Instructor training and assistance, including peer mentoring, continues through the progression of the online course.
21. Faculty members are provided with written resources to deal with issues arising from student use of electronically-accessed data.

Table 11 - Evaluation and Assessment Benchmarks

22. The program's educational effectiveness and teaching/learning process is assessed through an evaluation process that uses several methods and applies specific standards.
23. Data on enrollment, costs, and successful/innovative uses of technology are used to evaluate program effectiveness.
24. Intended learning outcomes are reviewed regularly to ensure clarity, utility, and appropriateness.