PRSP 1140 Draft Research Plan Assignment

Authentic Testing in Technical Programs – Retention Increase semesters Two to Three

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# Introduction/Background:

Historically, the highest attrition rate for students in the Computer Systems Technician, Technology programs at Durham College has been between second and third semester. This attrition level is three to four times higher than between any other semester pair.

There is a growing prevalence of authentic assessment in education, and with current studies in UDL and authentic testing showing that authentic teaching and assessment “connects” the students to the curriculum, I postulate that with the adoption of authentic assessment we will lessen the attrition rates in our courses between these semesters.

In order to establish whether or not a move to authentic testing has been successful in lowering attrition, a study of “traditional” historic courses must first be conducted. A relationship or correlation must be drawn between marks or success in these courses and retention.

To limit variables in this study, I will limit the courses investigated to DCOM 1100 and DCOM 2100, first and second semester courses that are taught using industry standardised and provided curriculum and standard testing, primarily true false and multiple choice, as well as hands on finals. Six sections of these courses are taught each term. This curriculum is standardized across sections/terms/years and a long track record for these courses is available.

I propose that a ratio be developed that ties marks to attrition for these courses. Once historic correlations have been established, three of the six course blocks will be taught using only authentic assessment, the remaining three course blocks will retain traditional test. Students will be followed from semester one through three, and comparisons will then be made to determine if there is a significant statistical change in retention between the three section blocks in each testing approach, and against historical retention/attrition levels.

Success will be determined by a significant change in attrition.

# Literature Review:

As individual items, that is items addressing retention and addressing authentic assessment, there has been much published work. That said, there has been little work done that connects directly these two areas.

Examining existing literature; I have selected seven different items, and categorized them into three groups;

## Items specific to retention.

* 1. Cuseo, J. (2007, Febuary 15). *Wiki.umn.edu.* Retrieved from University of Minnesota UMWiki: <https://wiki.umn.edu/pub/UMDRetentionAndGraduation/ArticlesAndDocuments/The_Big_Picture_of_retention.doc>
  2. Donner, A. L. (2000, March 20). *Colleges Ontario.* Retrieved from collegesontario: <http://www.collegesontario.org/outcomes/accountability/CO_MEASURING_GRADUATION.pdf>
  3. Drea, C. (2014). *Student Attrition And Retention In Ontario's Colleges*. Retrieved from College Quarterly: <http://www.collegequarterly.ca/2004-vol07-num02-spring/drea.html>

Within these items, Cuseo helps paint a picture of those items that effect retention. In his work, he divides issues that affect attrition into 4 groups, Academic, Motivational, Psychosocial and Financial. He further defines Academic to include an aspect of disinterest and within Motivational, he lists perceived irrelevance. These are the two areas where I will attempt to, via my literature review, tie Authentic testing to retention.

Donner and Drea both introduce outside environmental factors to attrition, and also provide context for our numbers, placing them within Ontario as a whole. They also will help tie KPI results to this studies results, giving us further statistics to assess.

## Items specific to authentic assessment

* 1. Maxwell, J. C. (2010, June 9). Contextualising Authentic Assessment, Assessment in Education: Principles, Policy & Practice. *Assessment in Education:Principles, Policy & Practice*, pp. 177-194. Retrieved from Contextualising: http://www.tandfonline.com/doi/pdf/10.1080/09695949992865
  2. Saulnie, B. L. (2008). From Teaching to Learning: Learner-Centered Teaching and Assessment

These items will assist in defining authentic assessment, and will be used to ensure that those course assessments changed qualify as authentic, and are graded in a manner that follows adopted best practices.

## Items that bridge both Retention and Authentic Assessment.

* 1. Dylan Wiliam, D. L. (2010, September 27). Teachers developing assessment for learning: impact on student achievement. *Assessment in Education:Principles, Policy & Practice*, pp. 49-65.
  2. Holcomb, J. J. (2004, August 1). *Assessing Student Learning in Introductory Statistics: An Authentic Assessment Approach.* Retrieved from The Academic Server: http://academic.csuohio.edu/holcombj
  3. Wiggins, G. (1990, 12). *ED328611 1990-12-00 The Case forAuthentic Assessment. ERIC Digest.* Retrieved from ERIC Digests: http://files.eric.ed.gov/fulltext/ED328611.pdf

It is in the third group that I will spend most of my time, though the first two groups help define the area of research, providing terms and context, these items will assist in validating results and will be used as benchmarks for success.

In particular, Wiggins makes the statement, “A move toward more authentic tasks and outcomes thus improves teaching and learning: students have greater clarity about their obligations (and are asked to master more engaging tasks), and teachers can come to believe that assessment results are both meaningful and useful for improving instruction.” (Wiggins, 1990) Relating the statement that students would have a better clarity about their obligations would work well with Cuseo’s academic and motivational statements. (Cuseo, 2007)

In all, though there are many papers and some studies, I have, to date, found little information that directly ties Authentic Assessment to Retention, and none that examines these items in my specific area of teaching.

# 3. Research Questions:

What is the effect on retention of moving to authentic assessment within technical courses? For the purpose of this study, “effect” will be gaged on two questions;

1. Is there a change in grades using authentic assessment vs. traditional testing?
2. Is there a change to retention when using authentic assessment vs. traditional testing?

# 4. Research Design:

Research Methodology: The type of research to be carried out for this project is a quantitative in nature, I will be attempting to remove subjective data and opinions, and focus on the numbers. Results will be based on statistical relevance.

Research Approach: Research will take place in four ways;

First, A literature review will be conducted with the intent of refining terms and definitions and to frame the question.

Second, historical research will be conducted on the selected courses.

Third, courses will be delivered using the traditional test methods, and authentic assessment.

Fourth, follow-up studies will be undertaken to gather relevant statistics on both groups.

Participants: Students will be primarily used in this study. Faculty will be utilized to deliver the material, but will not be involved / informed about the focus/goals of the study until after completion.

Ethical Considerations: No changes to learning outcomes will be made to the courses. Students who are in the Authentic Assessment group will be given the option to write standardized testing and utilize that mark should they feel that there is a discrepancy in markings / marks achieved in other sections. Assistance will be provided to faculty to ensure that no work load issues occur.

Ethical approval from the College Research Ethics board, as per policy ADMIN-231, Procedure 231.1 will be sought, By the procedures definition, “Human participants are individuals whose data or responses to interventions, stimuli or questions by the researcher are relevant to answering the research question” (Durham College Procedure 231.1) That stated, I believe that this project would be accepted as minimal risk.

Data Collection: Data will be collected via the Office of Institutional Research. No names or student numbers will be used, tracking numbers will be generated. These numbers will be abstracted and used for the purpose of following the students’ progression only.

Data Analysis: Data analysis will take the form of a statistical analysis of grades and of attrition. Grades from other courses, both in the previous courses and in courses taken concurrently with the study courses will be factored into the statistics.

# 5. Significance and Contribution to the Field:

It is my hope that showing that there is a correlation between the adoption of Authentic Assessment within my area of specialization, Computer Science, that I can do the following;

Gain buy-in from faculty that are traditionally mired in “old style” testing, and continually argue for a link between traditional testing and industry certification passing, rather than passing the program and getting a job.

Gain buy-in from administration, so that the costs of development, both pedagogy and professor, will be better received.

Increase the opportunities for in-house training and faculty development.

It is my hope to provide students with more real world connection to the subjects they are learning, to increase retention, and to promote student success.

# 6. Works Cited

Cuseo, J. (2007, Febuary 15). *Wiki.umn.edu.* Retrieved from University of Minnesota UMWiki: https://wiki.umn.edu/pub/UMDRetentionAndGraduation/ArticlesAndDocuments/The\_Big\_Picture\_of\_retention.doc

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