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Learner Interest, Reading Comprehension and Achievement in Web-Based Learning

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Background/Introduction

- Demand for online courses and programs has coincided with the economic downturn in the United States and resulted in decreased budgetary resources for many educational institutions (Allen & Seaman, 2010).
- This economic trend coincided with the need for increased literacy skills in the workforce (Snow, 2002).
- Budgetary constraints are barriers to learner analysis (Rogers, Graham, & Mayes, 2007) in the instructional design process affecting opportunities to support learning and increase literacy skills by considering learner interests and cultural aspects.
- One learner characteristic, language proficiency, which includes comprehension of written text, is one major cultural consideration.
- Another learner characteristic, learner interest, is enhanced by comprehension (Silvia, 2008). Learners with poor reading comprehension skills may be unable to achieve in the web based learning environment heavily distributed in written text.
- Identification of learner characteristics associated with success when learning online provides essential information for teachers and admissions personnel (Wojciechowski & Palmer, 2005), as well as instructional designers.
- Fiscally prudent guidelines for learner analysis that includes learner interest and reading comprehension, are feasible alternatives to omitting learner analysis altogether as an instructional design consideration.
- Similar to using standardized test scores for course placement, admissions personnel and advisors could use readily available information (Wojciechowski & Palmer, 2005) about the characteristics of students as guides toward selecting the optimal course format for learning, thus increasing the probability of successful completion and achievement.

Methods

- The sample in this study consisted of community college students enrolled in several sections of an online introductory health care course in the Midwestern area of the United States.
- This course is a pre-requisite for upper-level health care courses.
- These online courses were facilitated by the same instructor, containing the same content and assessment methods.

Focus of Research

Considering all interests and cultural characteristics in the learner analysis may not be feasible, therefore, this study explored which combination of learner interest (using Course Interest and Web Interest scales developed by Nummenma & Nummenmaa, 2008) and reading comprehension (obtained from the learner COMPASS scores) may be useful as predictors of achievement in a web-based introductory health care course.

Research Problem

What was not clear from prior research is the association between the learner characteristics of interest, reading comprehension, and achievement in the online learning environment.

Research Purpose

The purpose of this study was to determine which combination of learner interests and reading comprehension proficiency are best predictors of achievement in an online introductory health care course.

Research Design

Measure	Type of Variable	Source of Data/Analysis
Course Interest Score	Predictor	Mean of all ten course interest scale questions/Regression
Web Interest Score	Predictor	Mean of all ten web interest scale questions /Regression
Reading Comprehension Score	Predictor	COMPASS® reading score/Regression
Total Points Earned at the End of the Course (Achievement)	Criterion	Blackboard™ course management system/ Regression

Analysis

Linear regression analysis between COMPASS Reading scores and achievement (Total Points)

	R	R²	B	t	Sig. (p)
Constant			146.71	3.32	.000
COMPASS	.57	.32	1.50	2.84	.011
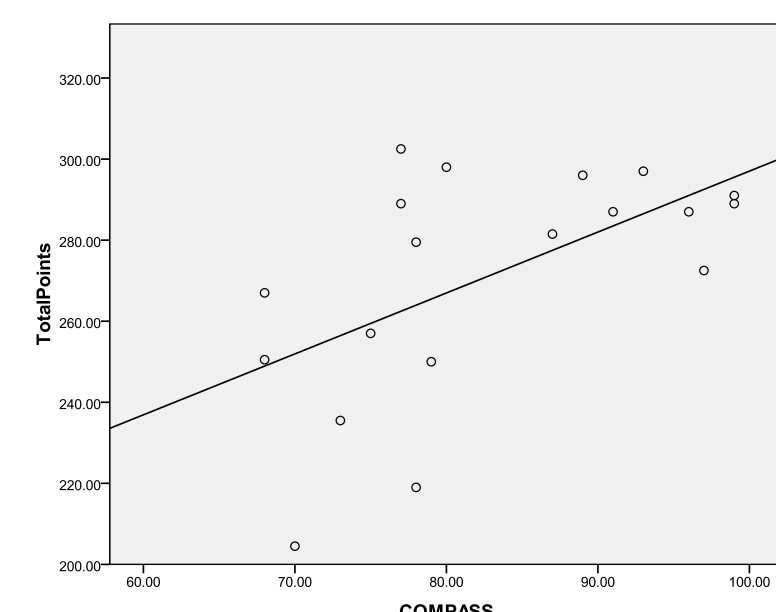
$F_{(1,17)} = 8.05, p = .011$

Linear regression analysis showed a moderate correlation between course topic interest (CI) and COMPASS reading scores and achievement ($R = .59$) that was statistically significant $F_{(2, 16)} = 4.42, p = .030$.

	R	R²	B	t	Sig. (p)
COMPASS, CI	.59	.36			.030
Constant			120.44	2.28	.036
CI			7.00	.93	.369
COMPASS			1.35	2.43	.027

Linear regression analysis showed a moderate correlation between interest in web-based learning (WI) and COMPASS reading scores and achievement ($R = .57$) that was statistically significant $F_{(2, 16)} = 3.79, p = .045$.

	R	R²	B	t	Sig. (p)
COMPASS, WI	.57	.32			.045
Constant			143.86	2.58	.020
WI			.69	.09	.931
COMPASS			1.49	2.68	.016

Linear regression analysis showed a moderate correlation between course interest (CI) and interest in web-based learning (WI) and COMPASS reading scores and achievement ($R = .59$) that was **not** statistically significant $F_{(3, 15)} = 2.76, p = .079$.

	R	R²	B	t	Sig. (p)
COMPASS, CI, WI	.59	.36			.079
Constant			119.99	1.93	.073
CI			6.99	.89	.387
WI			.12	.02	.988
COMPASS			1.35	2.32	.035

Conclusions/Recommendations

The results of this study demonstrated that

- individually, course interest (CI) and interest in web-based learning (WI) **did not** predict achievement.
- the COMPASS reading score positively predicted achievement, and was statistically significant when considered solely, $F_{(1,17)} = 8.05, p = .011$, when combined with course interest (CI), $F_{(2,16)} = 4.42, p = .030$, and when combined with web interest (WI), $F_{(2,16)} = 3.79, p = .045$.

Implications

This study demonstrated the use of old measures in new ways:

In resource constrained venues, learner characteristics such as the COMPASS reading score routinely collected on college students will be
- useful as a predictor of success and achievement in web-based courses
- beneficial as a guideline for students when selecting optimal course learning formats.

In addition, this study demonstrated that interest and reading comprehension are linked to achievement in the web-based learning environment. This encourages the practice of purposely enhancing interest and subsequent persistence by designing online instruction that includes reading comprehension as an important learner characteristic for participating in online learning.

Recommendation for Future Research

Future studies featuring instructional designs for online learning are warranted that purposely enhance comprehension of text as well as interest while measuring these effects on achievement.

References

Allen, I.E., & Seaman, J. (2010). *Class difference$: Online education in the United States, 2010.* Retrieved from http://sloanconsortium.org/publications/survey/class_differences

Nummenmaa, M., & Nummenmaa, L. (2008). University students' emotions, interest and activities in a web-based learning environment. *British Journal of Educational Psychology, 78*(1), 163-178.

Rogers, P., Graham, C., & Mayes, C. (2007). Cultural competence and instructional design: Exploration research into the delivery of online instruction cross-culturally. *Educational Technology Research & Development, 55*(2), 197-217. doi: 10.1007/s11423-007-9033-x

Silvia, P.J. (2008). Interest—The curious emotion. *Current Directions in Psychological Science, 17*(1), 57–60.

Snow, C.E. (2002). Reading for understanding: Toward an R&D program in reading comprehension. Santa Monica, CA: RAND. Retrieved from http://www.rand.org/pubs/monograph_reports/2005/MR1465.pdf

Tancred, M. (2012). *Learner interest, reading comprehension, and achievement in web-based learning.* Retrieved from Proquest Dissertations and Theses database. (3540465)

Wojciechowski, A., & Palmer, L. B. (2005). Individual student characteristics: Can any be predictors of success in online classes? *Online Journal of Distance Learning Administration, 8*(2). Retrieved from http://www.westga.edu/~distance/ojdla/summer82/wojciechowski82.htm

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