

## Student Alienation, Academic Achievement, and WebCT Use

**Genevieve Marie Johnson, Ph.D.**

Department of Psychology and Sociology  
Grant MacEwan College, 10700 – 104 Avenue  
Edmonton, Canada T5J 4S2  
Tel: +1 780 497 4541  
Fax: +1 780 497 5308  
johnsong@macewan.ca

### ABSTRACT

The current investigation sought to understand the relationships between college student alienation, academic achievement, and use of WebCT. Fifty-three students enrolled in an undergraduate educational psychology course provided three types of data: 1) self-rating of eight Likert scale alienation items, 2) academic achievement measured with four types of multiple choice questions evaluating mastery of course content, and 3) use of WebCT defined as total number of Hits, Articles Posted, and Articles Read. Findings suggest that peer alienation was associated with increased WebCT use; learning alienation and course alienation were associated with low WebCT use. Learning alienation demonstrated an inverse relation to academic achievement. In most cases, significant predictive relationships between academic achievement and student use of WebCT were curvilinear.

### Keywords

WebCT, Student alienation, College student achievement, Online learning

### Introduction

Alienation is a term used to describe student estrangement in the learning process (Brown, Higgins, & Paulsen, 2003). Mann (2001) defined alienation as “the state or experience of being isolated from a group or an activity to which one should belong or in which one should be involved” (p. 7). Newmann (1981) identified four fundamental aspects of student alienation; powerlessness, normlessness, meaninglessness, and social isolation. Powerlessness refers to student perception of absence of personal control in learning. Normlessness reflects lack of appropriate rule-governed behavior (e.g., academic dishonesty). Meaninglessness describes alienated students’ interpretation of curriculum as irrelevant to their current and future needs. Loneliness and separation from peers and teachers characterizes social isolation. Alienation is a useful construct for understanding the mechanisms associated with undesirable learner outcomes and in developing strategies to circumvent student academic failure (Redden, 2002; Taylor, 2000; Thorpe, 2003).

The causes of student alienation are multifaceted including curricular, institutional, and socio-cultural factors (Brown et al., 2003; Huffman, 2001; Redden, 2002; Rokach, Bauer, & Oreck, 2003; Taylor, 2001; Trusty & Dooley-Dickey, 1993). Alienated students feel incongruent with curricula and devoid of opportunities to establish meaningful connections. Such disconnection results in apathy in the learning process (Parish & Parish, 2000). According to Mann (2001), alienation is caused by a teaching-learning process characterized by compliance and bereft of creativity. In higher education, the learner is largely removed from the content to be learned; individual opinion is devalued and reliance on personal perception is dismissed as unscientific. Frosh (1991) argued that the very ethos of universities and colleges alienates students by excessive focus on utilitarianism, instrumentalism, measurable performance indicators, and standardized competencies. As Barnett (1994) cautioned:

To reduce human action to a constellation of terms such as “performance,” “competence,” “doing” and “skill” is not just to resort to a hopelessly crude language with which to describe serious human endeavors. In the end, it is to obliterate the humanness in human action. (p. 178)

Ross (2000) argued that contemporary society breeds alienation and disconnection among people. The increasing presence of information and communication technologies has been identified as a catalyst of alienation in human learning and social exchange (Cooper, 1995; Rintala, 1998). Knapp (1998) summarized the popular sentiment that “computer-based information technologies separate and alienate people from direct experience with nature and community, pollute the environment, disrupt ecosystems, and lead to inadequate curricula” (p. 7). Some educators/researchers paint a picture of alienated youth surfing the net in chronic social isolation (Tell, 2000) or gravitating toward violent and alienating computer games and Websites (Slater, 2003). Cadieux (2002) reported that college students in face-to-face learning groups had stronger feelings of trust and interaction effectiveness

than did students in online learning groups, although “no significant relationship was found between sense of community and course grades” (p. 1). Social and learning applications of information technology are, to some extent and in some cases, interpreted as mechanisms of student alienation (Muse, 2003).

In contrast to the complex and sometimes controversial causes of student alienation, the consequences of academic disconnection are straightforward. Withdrawing from post-secondary study prior to program completion has been attributed to student alienation (Cadieux, 2002; Muse, 2003). Slater (2003) identified aggression, manifest in a variety of forms, as a consequence of student alienation. A range of psychological and emotional problems characterize students who are alienated from the learning process and estranged from the instructional environment (Redden, 2002). According to Brown and her colleagues (2003), the consequences of student alienation are “gang activity, violence, vandalism, absenteeism, truancy, and other forms of deviant behavior” (p. 3). Alienated students experience an inability to cope with unfulfilled social and learning expectations. Mann (2001) interpreted alienation as a strategy of self-preservation. By refusing to engage in the processes of learning and by abandoning personal attempts to connect with curricula and with others, “the sense of self is not threatened, safety is maintained and unity is preserved” (p. 10). The consequences to the learner, unfortunately, are absence of vitality and abandonment of the desire to learn.

Student alienation has been measured in a variety of ways with a number of different instruments (Rokach et al., 2003; Slater, 2003; Thorpe, 2003). The *Chilly Classroom Climate Scale* and its variations (Janz & Pyke, 2000) have been popular in determining college student alienation associated with gender and non-traditional areas of study (Allan & Madden, 2003; Seifried, 2000; Serex, 1997). One approach to assessing student alienation is the *Classroom Life Instrument* (Johnson & Johnson, 1983) which includes 11 items that measure alienation including items that require inverse scoring (e.g., *Schoolwork is fairly easy for me*). Ghaith (2003), for example, used a modified version of the *Classroom Life Instrument* to investigate the relationship between perceptions of classroom support, feelings of alienation from school, and the academic achievement of university-bound learners of English-as-a-Foreign-Language.

## **Student Alienation in E-Learning Environments**

During the past few decades, instructional applications of computer and Internet technologies have resulted in range of e-learning environments and online learning events (McArthur, Parker, & Giersch, 2003). While considerable research effort has attempted to apprehend the mechanisms of e-learning and establish effective instructional technology practices (Al-Bataineh & Brooks, 2003; Hedberg, 2003; Johnson, Howell, & Code, in press; McNabb, 2001; van Eijl & Pilot, 2003; Valdez et al., 1999), many questions remain. The extent to which research findings based on traditional classrooms can be applied to e-learning is unclear. On the one hand, it could be that psycho-educational constructs such as alienation transcend the real – virtual instructional dichotomy. On the other hand, it may be that differences exist between real and virtual learning environments that radically alter the pattern of variables previously implicated in student alienation and academic achievement. In e-learning environments, are some students estranged from curricula and disconnected from e-instructional processes?

A particularly popular post-secondary application of Internet learning technology is WebCT (Curtin, 2002; Johnson & Howell, in press; Kendall, 2001; Linder & Murphy, 2001). WebCT is a course management system comprised of an integrated set of educational tools for constructing and managing online course environments. For teaching faculty, these tools fall into four categories: 1) educational tools that facilitate learning, communication, and collaboration; 2) content building utilities for organizing course material; 3) administrative utilities for managing courses; and 4) design utilities for constructing courses (WebCT, 2004). WebCT provides a variety of tools and features that can be added to courses including a conferencing system, on-line chat, student progress tracking, grade maintenance and distribution, access control, navigation tools, auto-marked quizzes, electronic mail, course calendar, and student homepages. Most typically, instructors tailor courses by selective use of WebCT tools (Willett, 2002).

The current investigation sought to understand the relationships between college student alienation, academic achievement, and use of WebCT. How is student alienation manifest in hybrid e-learning environments? Is student use of WebCT predictive of, or predicted by, academic achievement? What are the paths of influence between student alienation, academic achievement, and WebCT use?

## Method

### Participants

All students enrolled in two sections (40 students per section) of an undergraduate educational psychology course offered at a Western Canadian college were invited to participate in the study. Fifty-three students satisfied research requirements and were included in the study (i.e., many students were absent or late the day that participation was solicited). Both course sections were taught by the same instructor in the same way (i.e., utilized the same textbook and supplementary materials, PowerPoint slides, WebCT tools, course assignments, examinations, and evaluative weightings). All students were required to engage in regular online group discussion of case studies. Student online discussion postings were individually marked (i.e., independent of other group members' postings) and contributed 20% to the final course grade. All students had access to optional cooperative online study groups of which approximately 9% chose to make postings for bonus marks. Students also had WebCT access to a range of optional learning events such as online practice quizzes, course material, and grades. Thus, the course is best described as hybrid e-learning (Willett, 2002).

The 53 research participants ranged in age from 18 to 43 years ( $M = 21.5$ ,  $SD = 4.91$ ). Approximately 90% of the sample was female which is typical in the context of the participating college. Subjects reported, on average, 21 college credits complete (range 0 to 145,  $SD 26.1$ ) where 3 credits correspond to a typical one-semester course. With data missing for one participant, 49.1% of the sample indicated their intention to teach elementary school, 43.4% reported the intention to teach secondary school, and 5.7% were undecided.

### Measures

#### *Student Alienation*

A self-report rating scale was developed that measured student alienation. Eight items, based on the alienation subscale of Johnson and Johnson's (1983) Classroom Life Instrument and adapted for a college sample, were rated by participating students on a 7-point Likert scale ranging from 1 (not at all) to 7 (absolutely). Table 1 describes the pattern of ratings on these alienation items for the group of participating college students. For seven items alienation was reflected by high student ratings (e.g., I feel upset at school) and for one item alienation was reflected by low student ratings (i.e., I am a good student).

Table 1. Descriptive Statistics for Student Rating of Alienation Items

Student Self-Rated Alienation Item	Mean Rating	Range	SD
In this course the marking system is fair.	4.6	1 – 7	1.8
The workload in this course is excessive.	2.6	1 – 4	1.0
I should get along with others better than I do.	2.7	1 – 7	1.6
I get discouraged in school.	3.8	1 – 7	1.6
I feel upset at school.	3.1	1 – 7	1.7
I am not doing as well in college as I would like.	4.4	1 – 7	1.7
I am a good student.	5.7	3 – 7	1.0
When I take a test, I am afraid that I will fail.	4.3	1 – 7	1.9

Note: In the rating scale, 1 = not at all, 7 = absolutely.

#### *Student Use of WebCT*

Student use of WebCT was measured using the WebCT Track Students function. *Track Students* maintains a record of the number of times each student accesses course features (WebCT, 2004). Three measures of student use of WebCT were obtained via Track Students:

1. *WebCT Hits*: The number of times each student accessed the *Homepage* (first page following sign on), any tool (from the options available), or a *Content Module* page.
2. *Articles Read*: The number of articles each student opened in the *Discussions* tool. This included both required reading of online case study postings and optional reading of online study group postings.
3. *Articles Posted*: The number of articles each student posted in the *Discussions* tool. This included both required online case study postings and optional online study group postings.

Table 2 describes these three measures of WebCT use for the group of participating college student. There is considerable variability in participants' use of WebCT. One student, for example, scored 104 on WebCT Hits; another student scored 684 on the same metric during the same four month period. One student made no WebCT *Discussions* postings (i.e., achieved a mark of zero on required online case study postings and made no online study group postings for bonus marks); another student made 39 postings which included several optional online study group postings and postings beyond the recommended number for the case study assignments (i.e., minimum requirement of 16 online postings, four for each of four case studies).

Table 2. Descriptive Statistics for Measures of Student Use of WebCT

Measure of Student Use of WebCT	Mean	Range	SD
WebCT Hits ( <i>Homepage</i> , any tool, <i>Content</i> page)	289.0	104 – 684	120.0
Articles Read ( <i>Discussions</i> articles accessed)	94.5	35 – 162	30.5
Articles Posted ( <i>Discussions</i> articles posted)	17.9	0 – 39	5.5

### Student Academic Achievement

Student academic achievement was measured by the objective test items on three midterm examinations and one final examination. The midterm examinations were not cumulative, assessing student knowledge of a relatively limited amount of course material. The final examination was cumulative, assessing mastery of all course content. Each midterm examination contained 24 multiple choice items and the final examination contained 80 multiple choice items (36 items assessed knowledge of course material previously tested and 44 items assessed knowledge of untested material, that is, subsequent to the third midterm examination). While the midterm and final examinations included case study analyses that contributed to examination marks, due to the subjective nature of marking, these items were not included in any metric of student achievement. Multiple choice items were evenly distributed across four cognitive domains (i.e., factual, comprehension, application, conceptual) as specified in the supplementary test item bank (Renaud, 2003). Correct responses for each type of multiple choice item were summed across the midterm and final examinations to result in four measures of student academic achievement: total number of 1) factual, 2) comprehension, 3) application, and 4) conceptual examination items answered correctly. Table 3 describes these four measures of academic achievement for the group of participating college students.

Table 3. Descriptive Statistics for Measures of Student Academic Achievement

Multiple Choice Examination Item Category	Mean	Range	SD
Factual Items	22.9	14 – 29	3.5
Comprehension Items	17.0	9 – 26	3.7
Application Items	18.7	11 – 25	3.3
Conceptual Items	14.9	9 – 23	3.1

*Note:* Each of three midterm examinations contained 24 multiple choice items for a total of 72 items. The final examination contained 80 multiple choice items.  $72 + 80 = 152$  items divided by four question-types resulted in 38 test questions in each cognitive category. Metrics of student academic achievement reflect the number answered correctly in each multiple choice question category.

### Procedures

Toward the end of the academic term, during regular class time, following completion of all required and optional online assignments and midterm examinations but prior to the final examination, students were invited to participate in the study. Students were told that the study was directed toward understanding issues related to college student e-learning. The consent form included request to use student course marks and WebCT records for purposes of the study. The course instructor did not have access to the student completed alienation rating scale items and consent forms until after all course grades were submitted. Following completion of the final examination, the course instructor emailed all students, using WebCT *Mail*, describing the study in detail and providing direction to online information regarding study findings and implications for instructional practice.

### Results

The eight student-rated alienation items were correlated (Pearson Product-Moment) with the three measures of WebCT use (refer to Table 4) and the four measures of academic achievement (refer to Table 5). Several

significant correlations emerged in a direction consistent with previous research. For example, as perception of self as a competent learner (i.e., I am a good student) increased, use of WebCT (i.e., Hits) and achievement (i.e., factual test items) tended to increase. Some significant correlations, however, were inconsistent with anticipated direction. As student rating of the item, I should get along with others better than I do, increased, use of WebCT (i.e., Hits, Articles Read, Articles Posted) tended to increase. In general, alienation items correlated more with student use of WebCT than with measures of academic achievement.

Table 4. Correlations between Measures of Student Alienation and WebCT Use

Student Self-Rated Alienation Item	WebCT Hits	Articles Read	Articles Posted
In this course, the marking system is fair.		-.29*	
The workload in this course is excessive.	-.34*		-.34*
I should get along with others better than I do.	.40**	.32*	.35**
I get discouraged in school.	-.31*		
I feel upset at school.			
I am not doing as well in college as I would like.			
I am a good student.	.35**		.29*
When I take a test, I am afraid that I will fail.			

\* $p < .05$  \*\* $p < .01$

Table 5. Correlations between Student Alienation and Academic Achievement

Student Self-Rated Alienation Item	Multiple Choice Examination Item Category			
	Factual	Comprehension	Application	Conceptual
In this course, the marking system is fair.				
The workload in this course is excessive.				
I should get along with others better than I do.				
I get discouraged in school.				
I feel upset at school.			-.35*	
I am not doing as well in college as I would like.		-.31*		
I am a good student.	.34*			
When I take a test, I am afraid that I will fail.			-.31*	-.35*

\* $p < .05$

Given the highly exploratory nature of the investigation, linear and quadratic regression analyses were conducted with measures of WebCT use as both independent and dependent variables. With WebCT use as the independent variable, Articles Posted evidenced a curvilinear relationship with factual test items answered correctly ( $DF = 48$ ,  $F = 3.25$ ,  $P = .047$ ) accounting for approximately 12% of the variance in that metric of student achievement. Visual inspection of the quadratic regression line revealed that increased student postings predicted increased student achievement until approximately 28 postings, after which achievement decreased slightly as postings increased. WebCT Hits approached a significant curvilinear relationship with application test items ( $DF = 48$ ,  $F = 3.10$ ,  $P = .054$ ) accounting for approximately 11% of the variance in that metric of student achievement. Visual inspection of the quadratic regression line revealed that the fewest and the most WebCT Hits predicted low student achievement with maximum student achievement predicted by moderately high WebCT Hits (approximately 400 hits, one standard deviation above the mean).

Linear and quadratic regression analyses were conducted in an attempt to apprehend the capacity of academic achievement to predict student use of WebCT (i.e., academic achievement as the independent variable). Factual test items evidenced a curvilinear relationship with WebCT Articles Posted ( $DF = 50$ ,  $F = 4.63$ ,  $P = .014$ ) accounting for approximately 16% of the variance in that metric of WebCT use. Linear regression of factual test items was also predictive of WebCT Articles Posted ( $DF = 51$ ,  $F = 5.52$ ,  $P = .023$ ), accounting for approximately 10% of the variance in that metric of WebCT use. Observed scores revealed three students within the average achievement range (i.e., 22 to 25 factual test items correct) who made excessive WebCT postings (i.e., more than 2  $SD$  above the mean). These three students affected both linear and quadratic regression lines. Number of application test items answered correctly predicted both WebCT Hits ( $DF = 49$ ,  $F = 4.00$ ,  $P = .025$ ) and Articles Read ( $DF = 49$ ,  $F = 3.81$ ,  $P = .029$ ) in significant curvilinear relationships accounting for, in both cases, approximately 14% of the variance in student use of WebCT (Figures 1 and 2). High achieving and low achieving students were lighter users of WebCT than were average achieving students.

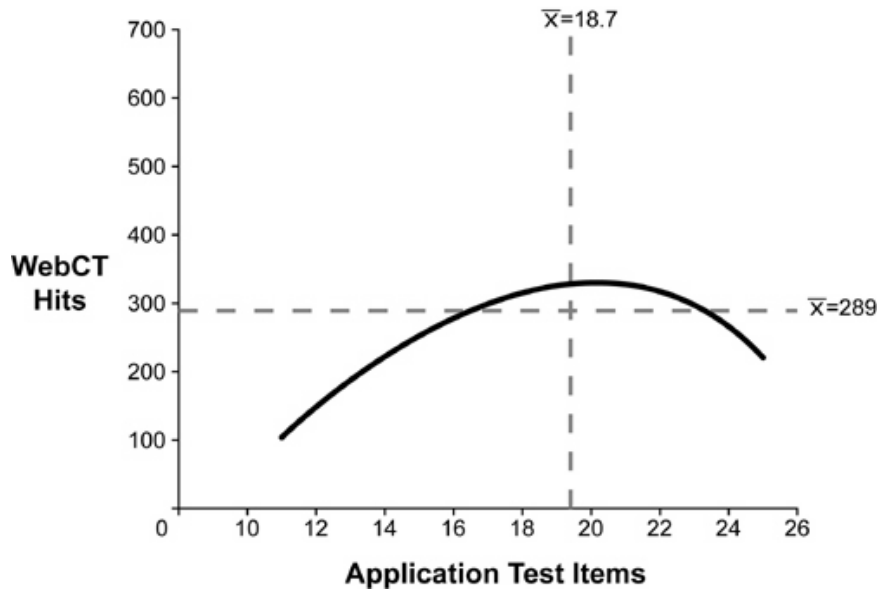


Figure 1. Curvilinear regression analysis: Application test items predicting WebCT Hits

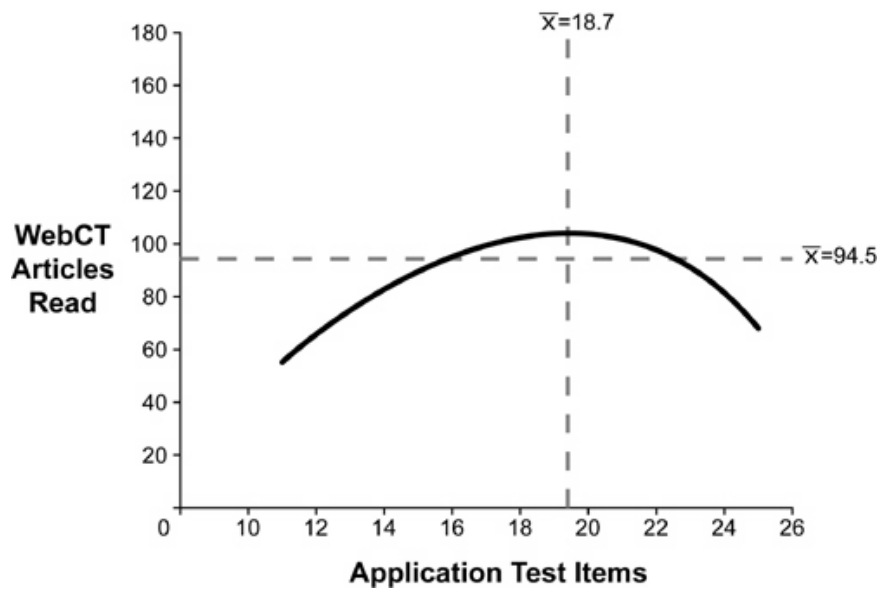


Figure 2. Curvilinear regression analysis: Application test items predicting WebCT Articles Read

## Discussion

Student alienation is typically conceptualized as a uniform construct (Johnson & Johnson, 1983). Given the pattern of correlations between student self-rated alienation items and measures of WebCT use, this may not be accurate in hybrid e-learning environments. The pattern of significant relationships is explained by categorization of the eight items used to measure student alienation. Two items measured *Course Alienation* (The workload in this course is excessive. In this course, the marking system is unfair). One item addressed peer relations and may be considered indicative of *Peer Alienation* (I should get along with others better than I do). The remaining five items assessed global student alienation (e.g., I get discouraged in school) and are categorized as indicators of *Learning Alienation*. Such a classification of alienation self-rated items reveals a distinguishable pattern of correlations.

As *Peer Alienation* increased, all measures of student use of WebCT tended to increase. Apparently, as students experienced disconnection from peers, they sought virtual connection with course content (i.e., WebCT Hits) and

with peers (i.e., Articles Posted and Articles Read). As *Course Alienation* increased, students were less likely to utilize WebCT. Students alienated from the course may have been generally resistant to involvement with course materials and learning activities which included WebCT. As *Learning Alienation* increased, student use of WebCT tended to decrease. Students who rated themselves as discouraged in school accessed WebCT less than students who were not estranged from learning processes. *Peer Alienation* and *Course Alienation* were not significantly correlated with any measure of academic achievement; *Learning Alienation* inversely related to achievement. In this regard, student alienation was related to academic achievement but in ways that may be unique to hybrid e-learning environments. Learning alienation appeared most critical to student achievement, although all categories of alienation were related to student use of WebCT.

Curvilinear relationships between student use of WebCT and academic achievement are suggested by the results of this study. Some metrics of student use of WebCT (i.e., Articles Posted and Hits) predicted some dependent variables (i.e., factual and application test items answered correctly). The fewest number of WebCT postings predicted the lowest student achievement. However, the greatest number of WebCT postings did not predict the highest student achievement. Few WebCT postings may have adversely affected achievement by minimizing active student involvement in e-learning opportunities. At the same time, excessive virtual postings may have reduced time available for other forms of e-learning (e.g., online practice quizzes). Some students may have inaccurately concluded that increased postings compensate for lack of alternative learning behaviors. Additionally, relative to the class mean, few WebCT Hits predicted low student achievement and many WebCT Hits predicted average student achievement (i.e., application test items correct). Limited use of WebCT may have compromised student learning by limiting course engagement; excessive use of WebCT may reflect too narrow a range of student study strategies and learning behaviors. No metric of student use of WebCT was predictive of comprehension and conceptual test items suggesting that e-learning may have uniquely affected concrete forms of cognitive processing such as those involved in responding to factual and application test items.

The capacity of academic achievement to predict student use of WebCT was generally greater than the capacity of WebCT use to predict academic achievement, although a reciprocal effect could be argued since significance was achieved in both predictive directions. In general, students who correctly answered the fewest number of factual test items made the fewest number of WebCT postings. As achievement increased, WebCT postings increased until, in some cases, average achievement (approximately 22 factual test items answered correctly) was associated with excessive posting. High achieving students (i.e., at least one standard deviation above the mean on factual test items) made an average number of WebCT postings (i.e., approximately 18 postings). Perhaps, highly motivated but averaging achieving students engaged in excessive postings in hopes of improving their achievement, which proved ineffective. High achieving students may have engaged in a variety of virtual and real learning behaviors, which was effective in mastering course content.

Application test items predicted both WebCT Hits and Articles Read in curvilinear fashion with no evidence of linear relationships (Figures 1 and 2). Students who achieved the lowest success with application test items were the least likely to capitalize on WebCT learning events, perhaps indicative of general lack of study effort and course engagement. Students who achieved the highest success with application test items were less likely than average achieving students to utilize WebCT tools and content pages, perhaps indicative of a wider range of learning behaviors. Students who correctly answered the most and fewest application test items were also those who read the fewest WebCT postings. Average student achievement (i.e., approximately 18 application test items correct) was a better predictor of high WebCT use (i.e., Articles Read) than was low or high student achievement. Low achievers, alienated from the learning process, may not have read other students' postings in WebCT *Discussions*, a behavior which may have further contributed to low achievement. High achieving students, while conscientious about satisfying required course assignments, did not exert excessive effort reading other students' postings. Such limited reading of postings may have further contributed to high achievement by allowing time for other study and learning behavior.

## **Limitations and Further Research**

A limitation of the current investigation was sample characteristics, most notably, sample size and gender bias. The small sample ( $N = 53$ ) may have resulted in idiosyncratic data. Because approximately 90% of the sample was female, generalization of findings to male students is not possible. Peer alienation, for example, may be experienced differently by males and females; online strategies to compensate for such alienation may be gender-specific.

The proposed categorization of student self-rated alienation items has face validity but content validity was not established. Indeed, there is no evidence that the eight alienation items used in this study factor into the three proposed categories (i.e., peer, course, and learning alienation). Conceptualization and corresponding measurement of the psycho-educational construct of student alienation requires further investigation. The assumption that alienation is a single unified construct may be accurate in traditional learning environments but in online instructional contexts, student alienation may require a typology. The underlying causes of student alienation may be consistent across real and virtual learning environments but the consequences in terms of student behavior may vary as a function of real versus virtual learning environments. While heavy WebCT use was associated with peer alienation, we cannot conclude that heavy WebCT use was detrimental to students. Heavy WebCT use may have compensated for peer alienation and functioned as a mechanism of virtual peer connection.

The pattern of significant predictive relationships between metrics of WebCT use and measures of student achievement requires further investigation. Only factual and application test items were predictive of, or predicted by, student use of WebCT. Significance was not reached with comprehension and conceptual test items as independent or dependent variables. Factual and application test items appear to measure concrete interpretation of course material. Comprehension and conceptual test items, conversely, require a more abstract level of course content extrapolation. It may be that e-instruction facilitates concrete forms of student cognitive processing at the expense of more abstract forms of thinking.

A finding of the current investigation that requires further investigation is the predictive differences in WebCT Articles Posted and Articles Read. Posting and reading in e-learning environments were differentially associated with student academic success. A real classroom equivalent is students contributing versus actively listening in cooperative groups. (The analogy must include *active* listening. In real discussion groups, students may be physically present but not actively listening. In virtual discussion groups, postings are opened as hyperlinks which require student intention and action.) Student success with factual test items predicted number of Articles Posted in WebCT *Discussions*. Success with application test items predicted number of times online articles were read. What are the relative learning advantages and disadvantages of posting versus reading in e-discussion? What cognitive and social processes are involved in virtual student expression as opposed to virtual student reception?

## Conclusion and Implications for Practice

Figure 3 presents a graphic representation of the interrelations between and predictive utility of student alienation, academic achievement, and WebCT use. Peer alienation is associated with increased WebCT use while learning alienation and course alienation are associated with low WebCT use. Only learning alienation is associated with academic achievement, in an inverse relationship. The direction of causation between academic achievement and WebCT use remains unclear, although there is evidence of reciprocal influence with achievement controlling WebCT use more than WebCT use controls achievement. Regression analysis requires assumption of dependent and independent variables. Given the highly exploratory nature of the current investigation, dependent and independent variable status alternated in order to determine predictive relationships. In most cases, significant predictive relationships between academic achievement and student use of WebCT were curvilinear.

While decisive conclusions may be premature, the current investigation lends support to the notion that variation in online learning behavior is related to college student achievement and alienation. Educational system developers could easily implement some form of alert that may be psychologically useful to learners and pedagogically useful to teachers. For example, in the future, instructors may be able to input user parameters associated with the best psycho-educational outcomes. In the context of the current investigation, such parameters may be 4 to 5 articles posted and 40 to 100 WebCT hits following one month of instruction, 8 to 10 articles posted and 80 to 200 WebCT hits following two months of instruction, and so on. The instructor could be electronically alerted to specific students whose e-learning behavior fell outside of such parameters. Via email or other means, the instructor could advise identified students, on the one extreme, of the benefits of e-learning events and, on the one extreme, of the benefits of balanced and varied approaches to virtual and hybrid learning. Conceivably, such an alert system could directly notify the student that his/her online behavior may not be conducive to maximum achievement outcomes. Indeed, at some future point, online learner behaviors that are clearly linked to less than ideal student functioning (e.g., peer alienation and excessive asynchronous communications) may result in alerts and information links (e.g., college clubs, volunteer opportunities) that move some students toward greater social and psychological connection.



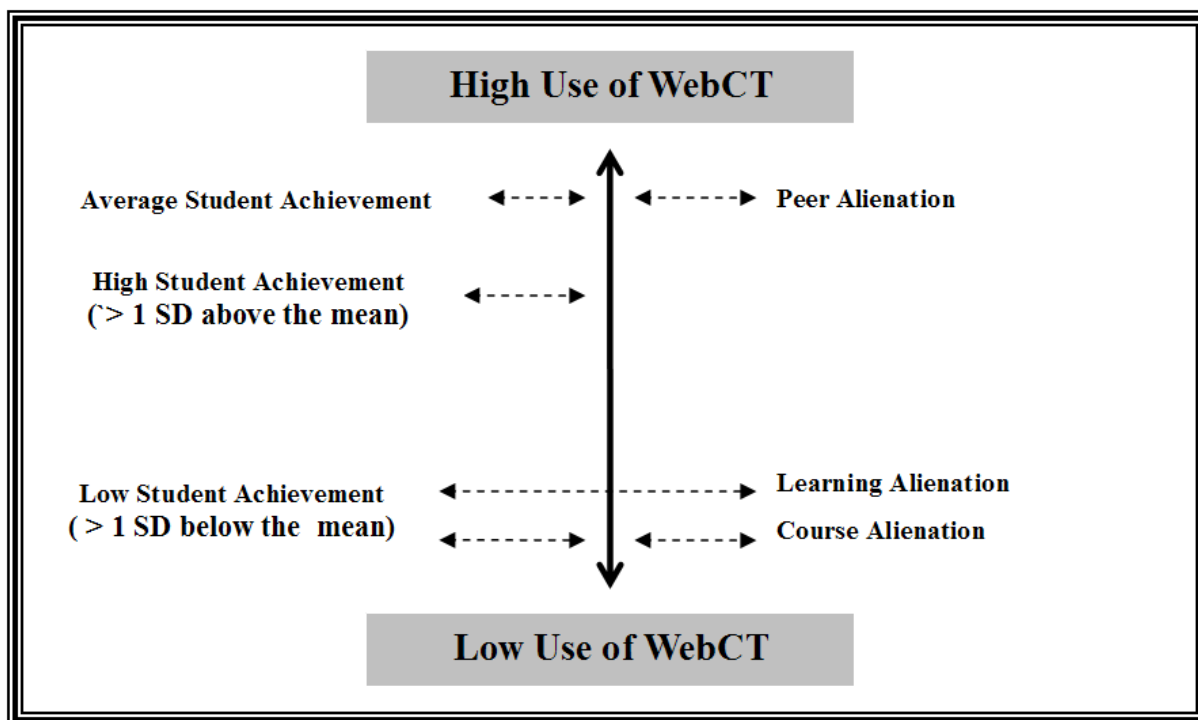


Figure 3. A model of the interaction between student alienation, academic achievement, and WebCT use

## References

- Al-Bataineh, A., & Brooks, L. (2003). Challenges, advantages, and disadvantages of instructional technology in the community college classroom. *Community College Journal of Research and Practice, 27*, 473-484.
- Allan, E. J., & Madden, M. (2003). Chilly classrooms for female undergraduate students at a research university: A question of method? *Paper presented at the Annual Meeting of the American Educational Research Association*, Chicago, IL, USA, ERIC Document Reproduction Service No. ED479384.
- Barnett, R. (1994). *The limits of competence-knowledge, higher education and society*, Buckingham, England: Society for Research into Higher Education/The Open University Press.
- Brown, M. R., Higgins, K., & Paulsen, K. (2003). Adolescent alienation: What is it and what can educators do about it? *Intervention in School & Clinic, 39*, 3-7.
- Cadieux, C. P. (2002). *Variables associated with a sense of classroom community and academic persistence in an urban community college online setting*. Doctoral dissertation submitted to Old Dominion University, Virginia, ERIC Document Reproduction Service No. Ed474545.
- Cooper, D. E. (1995). Technology: Liberation or enslavement? In R. Fellows (Ed.), *Philosophy and technology* (pp. 7- 18), Cambridge, MA: Press Syndicate of the University of Cambridge.
- Curtin, J. (2002). WebCT and online tutorials: New possibilities for student interaction. *Australian Journal of Educational Technology, 18*, 110-26.
- Frosh, S. (1991). *Identity crisis: Modernity, psychoanalysis and the self*, London, England: Macmillan.
- Ghaith, G. (2003). The relationship between forms of instruction, achievement and perceptions of classroom climate. *Educational Research, 45*, 83-93.
- Hedberg, J. G. (2003). Ensuring quality e-learning: Creating engaging tasks. *Educational Media International, 40*, 175-186.

- Huffman, T. (2001). Resistance theory and the transculturation hypothesis as explanations of college attrition and persistence among culturally traditional American Indian students. *Journal of American Indian Education, 40*, 1-23.
- Janz, T. A., & Pyke, S. W. (2000). A scale to assess student perceptions of academic climates. *Canadian Journal of Higher Education, 30*, 89-122.
- Johnson, D. W., & Johnson, R. T. (1983). Social interdependence and perceived academic and personal support within the classroom. *Journal of Social Psychology, 120*, 77-82.
- Johnson, G. M., & Howell, A. J. (in press). Attitude toward instructional technology following required vs. optional WebCT usage. *Technology and Teacher Education*.
- Johnson, G. M., Howell, A. J., & Code, J. R. (in press). Online discussion and college student learning: Toward a model of influence. *Technology, Pedagogy and Education*.
- Kendall, M. (2001). Teaching online to campus-based students: The experience of using WebCT for the community information module at Manchester Metropolitan University. *Education for Information, 19*, 325-46.
- Knapp, C. E. (1998). The emperor has no clothes ... and computer-based information technology harms the quality of all life. *Science, Mathematics, and Environmental Education, 101*, 7-11.
- Linder, J. R., & Murphy, T. H. (2001). Student perceptions of WebCT in a web-supported instructional environment: Distance education technologies for the classroom. *Journal of Applied Communications, 85*, 36-47.
- McArthur, D., Parker, A., & Giersch, S. (2003). Why plan for e-learning? *Planning for Higher Education, 31*, 20-28.
- McNabb, M. (2001). In search of appropriate usage guideline. *Learning and Leading with Technology, 29*, 50-53.
- Mann, S. J. (2001). Alternative perspective on the student experience: Alienation and engagement. *Studies in Higher Education, 26*, 7-13.
- Miller, M. T., & Lu, M. Y. (2003). Serving non-traditional students in e-learning environments: Building successful communities in the virtual campus. *Educational Media International, 40*, 163-69.
- Muse, H. E. (2003). The Web-based community college student: An examination of factors that lead to success and risk. *Internet and Higher Education, 6*, 241-261.
- Newmann, F. M. (1981). Reducing student alienation in high school: Implications of theory. *Harvard Educational Review, 51*, 117-129.
- Parish, T. S., & Parish, J. G. (2000). Determining a profiler of disconnected students. *Paper presented at the Annual Meeting of the Mid-Western Educational Research Association, Chicago, IL, USA, ERIC Document Reproduction Service No. ED447191*.
- Renaud, R. (2003). *Test item file for Educational Psychology (2<sup>nd</sup> Canadian Edition)*, Toronto, ON: Pearson Education Canada.
- Redden, C. E. (2002, October). Social alienation of African American college students: Implications for social support systems. *Paper presented at the National Convention of the Association for Counselor Education and Supervision, Park City, UT, USA, ERIC Document Reproduction Service No. ED470257*.
- Rintala, J. (1998). Computer technology in higher education: An experiment, not a solution. *Quest, 50*, 366-378.
- Rokach, A., Bauer, N., & Oreck, T. (2003). The experience of loneliness of Canadian and Czech youth. *Journal of Adolescence, 26*, 267-282.

- Ross, E. W. (2000). Alienation, exploitation, and connected citizenship. *Theory and Research in Social Education, 28*, 306-310.
- Seifried, T. J. (2000). The chilly classroom climate revisited: What have we learned, are male faculty the culprits? *PAACE Journal of Lifelong Learning, 9*, 25-37.
- Serex, C. P. (1997). Perceptions of classroom climate by students in non-traditional majors for their gender. *Paper presented at the Annual Meeting of the Association for the Study of Higher Education*, Albuquerque, NM, USA, ERIC Document Reproduction Service No. ED416753.
- Slater, M. D. (2003). Alienation, aggression, and sensation seeking as predictors of adolescent use of violent film, computer, and website content. *Journal of Communication, 53*, 105-121.
- Taylor, J. S. (2001, April). Through a critical lens: Native American alienation from higher education. *Paper presented at the Annual Meeting of the American Educational Research Association*, Seattle, WA, USA, ERIC Document Reproduction Service No. ED452753.
- Taylor, J. S. (2000, April). Portraits in alienation: Native American students on a predominantly white campus. *Paper presented at the CIC Graduate Research Conference*, Iowa City, IA, USA, ERIC Document Reproduction Service No. ED478059.
- Tell, C. (2000). Generation what? Connecting with today's youth. *Educational Leadership, 57*, 8-13.
- Thorpe, P. K. (2003, April). A mediation model relating teacher ratings of student achievement to student connectedness at school. *Paper presented at the Annual Meeting of the American Educational Research Association*, Chicago, IL, USA, ERIC Document Reproduction Service No. ED476417.
- Trusty, J., & Dooley-Dickey, K. (1993). Alienation from school: An exploratory analysis of elementary and middle school student's perceptions. *Journal of Research and Development in Education, 19*, 1-12.
- van Eijl, P., & Pilot, A. (2003). Using a virtual learning environment in collaborative learning: Criteria for success. *Educational Technology, 43*, 54-56.
- Valdez, G., McNabb, M., Foertsch, M., Anderson, M., Hawkes, M., & Raack, L. (1999). *Computer-based technology and learning: Evolving uses and expectations*, Oakbrook, IL: North Central Regional Educational Laboratory.
- WebCT Inc. (2004) *WebCT: Learning without limits*, retrieved November 30, 2004, from <http://www.webct.com/>
- Willett, H. G. (2002). Not one or the other but both: Hybrid course delivery using WebCT. *Electronic Library, 20*, 413-19.