International Journal for the Scholarship of Teaching and Learning

Volume 1 | Number 2 Article 18

7-2007

Value Drivers in Business Course Design: A Student Stakeholder Perspective

John Knight
University of Tennessee at Martin, jknight@utm.edu

Daniel Tracy
University of South Dakota, dtracy@usd.edu

Value Drivers in Business Course Design: A Student Stakeholder Perspective

Abstract
As one of the important stakeholders in the academic process, students and their preferences should be considered when the instructor selects the various course design features. Although students are not the only stakeholders in the academic process, their receptiveness to classroom instruction is clearly a central focus of that process. This paper examines a large sample of business student data on their preferences with respect to fourteen controllable course design features. The preferences are examined in light of their relative ranked importance and relative intensity. Additionally, the data is examined in light of potential differences in student preferences relative to various demographics. The paper summarizes the ranked contributions of different course design features from a student perspective. These findings should assist instructors in designing course parameters to meet student considerations without compromising an instructor's personal choice and academic freedom.

Keywords
Business course design, Student preferences, Scholarship of teaching and learning

Value Drivers in Business Course Design: A Student Stakeholder Perspective

John Knight
University of Tennessee at Martin
Martin, Tennessee, USA
jknight@utm.edu

Daniel Tracy University of
South Dakota Vermillion,
South Dakota
dtracy@usd.edu

Abstract

As one of the important stakeholders in the academic process, students and their preferences should be considered when the instructor selects the various course design features. Although students are not the only stakeholders in the academic process, their receptiveness to classroom instruction is clearly a central focus of that process. This paper examines a large sample of business student data on their preferences with respect to fourteen controllable course design features. The preferences are examined in light of their relative ranked importance and relative intensity. Additionally, the data is examined in light of potential differences in student preferences relative to various demographics. The paper summarizes the ranked contributions of different course design features from a student perspective. These findings should assist instructors in designing course parameters to meet student considerations without compromising an instructor's personal choice and academic freedom.

Introduction

Prior to every term, students make decisions regarding the courses they wish to take. Some courses are required and some are electives, while some have only one instructor and others offer a choice of instructors. In the registration process, students make judgments not only about specific courses and teachers, but also about grapevine information gathered on a variety of issues, including attendance policies, grading policies, assignments, and others. When the course is nearly complete, they typically have the opportunity to provide limited feedback through a course evaluation. However, as one of the important stakeholders in the academic process, the student seems to have little direct input into the original course design process. While some faculty would argue that students should not have direct input, others would argue that some decisions about the course should consider student preferences. This paper examines an initial step in the examination of course design value drivers preferred by the student stakeholder. Fourteen course design parameters were proposed for students to express their opinions as to the importance of each feature along with their preferences for the intensity level of each feature. The results of the study will enable any instructor to select from the ranked features and intensity levels so as to incorporate student preferences and values into their own course design. Since the course design features are shown to be independent (for all practical purposes), an instructor can select any or all of the student preferred features suitable to their own

https://doi.org/10.20429/ijsotl.2007.010218

teaching style (and academic freedom) with the assurance than any selections will ultimately improve the course from the student stakeholder perspective.

Literature Review

As the concept of total quality management evolved (Fiegenbaum, 2003), some academicians and administrators began to apply the same principles by suggesting that the student is an important stakeholder of higher education. When the student is viewed as an important stakeholder, student preferences become a primary focus of the educational design process – much like a business customer establishes the parameters for quality and delivery while negotiating a price. In this context, soliciting information from the students to ascertain the appropriate value drivers that maximize stakeholder satisfaction would be appropriate (Tracy and Knight, 2005). Some academicians have resisted this concept feeling that students do not necessarily prefer to maximize the value of the educational process. For example, a student may be quite happy when a class is cancelled, while a rational stakeholder may complain that they didn't receive the stipulated amount of service (hours of instruction) for the pre-established tuition. Those who marginalize the importance of the student as a stakeholder suggest that the educational process has other more important stakeholders that must be considered in the process – stakeholders such as taxpayers who typically pay some of the educational bills, potential employers who hire the students, graduate schools that recruit the students, and the students' parents who often pay the bills.

Regardless of the position taken regarding the student as a stakeholder, students have become increasingly important evaluators of the academic experience, given the competitive nature of recruiting a finite supply of students into a system with ample capacity and the increasing concern for accountability of the instructional staff. Making the university experience student-friendly has become one primary focus of importance as universities vie for the attention of incoming students. Once at the university, students are exposed to an ever-increasing array of retention programs and are then asked to participate in the process of evaluating teaching and course delivery through student evaluations (d'Apollonia and Abrami, 1997; Greenwald, 1997). Within that context, student evaluation of teachers and instructors has become common with the actual and/or implied utilization of student evaluations for assigning performance ratings to instructors (McKeachie, 1997; Theall and Franklin, 1990).

Some faculty resist the efforts of students to participate in the improvement process by ignoring evaluations and challenging the implied relationship between student evaluation and teaching effectiveness. They feel that the student is incapable of deciding what should be taught and how the material should be taught as the students are unlearned in the subject matter. Faculty that subscribe to that implied relationship seem to differentiate themselves from other instructors in terms of implied teaching effectiveness through evaluations by students. Typically their classes are more popular and/or rated more highly in student evaluations for a variety of causal factors including course design features, personality and presentation of the instructor, and the nature of the course (required or elective; easy or difficult).

A simple, but intriguing question arises however when one considers that the impact on student rating of the course is intertwined with course design variables, instructor personality styles, and course difficulty, along with the overall course selection process (Babad, 2003). Can a faculty member responsibly manipulate these variables to create

https://doi.org/10.20429/ijsotl.2007.010218

more value for the students as evidenced by higher student ratings? Obviously, some of these course variables are under the direct control of the instructor, while others are relatively uncontrollable elements of the process. Controllable variables might include type and number of tests and grading scale administered, while some uncontrollable variables might be the assigned course time, location and even instructor personality. Conceivably, identifying controllable variables based on student input can provide instructors with the knowledge and opportunity to improve student stakeholder value without sacrificing faculty control of decisions on course content and rigor. The result can be more satisfaction and value for the student without compromising faculty academic freedom. Uncontrollable variables are those factors that are difficult to change without extensive work, such as an instructor's propensity for humor, voice quality and other personal characteristics (physical stature or age). Many issues related to course desirability for students have been studied using a variety of different methodologies. Each of these studies touches on the research to be conducted in this paper without actually addressing the specific study area of interest – that is, selection of instructor controllable value drivers for optimal course design from a student perspective.

Several methodological approaches to investigate the general area are highlighted in the literature. First, many efforts have centered on attempting to identify the correlation between student evaluations, course parameters, and teacher styles, called student rating of teachers. Many researchers have attempted to determine student value drivers by analyzing student ratings of teachers based on numerous course characteristics or from traditional course/instructor surveys. According to one author, some of the principle factors correlated to student rating of teachers include faculty humor, instructor personality and style, lack of criticism by students, and course interest generated by instructor knowledge and expertise (Babad, 1999).

Other efforts have focused on measuring course parameters such as course workload (Greenwald and Gillmore, 1997), student satisfaction, and the impact of student demographic characteristics on course selection and related satisfaction (Martin, 1989).

Further, other efforts have been concerned with the course selection process as it relates to a variety of factors, including learning value, lecturer quality, course difficulty, and other factors. Different methodologies have been utilized in this endeavor including surveys, post-course descriptive analyses, and experimental designs. One such study (Babad, 2001) focused on the course selection process for a five course schedule from potential alternatives. The findings indicated that the first course chosen was typically taken for prospective intellectual level, quality of teaching, and students' potential learning, whereas the last course was normally selected to be easier in order to balance the workload of the student. The results also indicated that first choice alternatives received higher student ratings than last choice selections.

In another study regarding course selection (Babad, 2003), three primary components of student selection stimuli were used in a 2x2x3 full factorial design to indicate the selection preferences in Learning Value, Lecturer Ability, and Ease of Course. The use of experimental design forced the respondents into a selection process that forced trade-offs in the selection of hypothetical courses for study. In general, students preferred courses with high learning value, entertaining lecturing ability, and relatively easy course work load. Courses avoided were less of a learning value, less entertaining, and heavier work load.

https://doi.org/10.20429/ijsotl.2007.010218

In summary, many studies have attempted to identify teacher and course factors that correlate to student rating of teachers. A mixture of findings has resulted. Further, other studies have attempted to describe the process that students use in the selection of courses based on identified course and lecturer characteristics.

A compromise between the instructor's need for academic freedom in selecting topics and methodology and the student's preference for user-friendly course design seem possible and practical. Factors of mutual agreement could be included if the student course design criteria that would most affect student acceptance and least compromise faculty academic preferences could be identified. Such will be the research focus of this paper.

This research is not designed to discriminate among those factors that form an intricate web of process decisions regarding course selection. Factors such as whether a course is an elective or not, teacher personality, and time of day the class is offered are relatively uncontrollable by an individual instructor. This research hopes to focus on the controllable academic factors that could be optimally chosen to increase student value while minimizing infringement on the academic freedom to present class material without active intervention.

Research Direction and Methodology

The research presented is designed to rank-order controllable course design features and identify the preferred intensity levels for each feature. Subsequently, statistically significant student value drivers in course design can be identified with the purpose of increasing student course value, while allowing the instructor to minimize interference in the academic presentation and testing of course material.

The research included several steps. First, a review of the relevant literature was utilized to develop a brainstorming list of controllable course design parameters. Next, a pilot study of student rankings of course features was executed which allowed for additional student input on course parameters that they might like to add. Then a ranking instrument of course design parameters was administered in light of research relating to parameters that were found to be significant within the overall course selection process (Babad, 2003). The rankings of course design features were then further refined so that students selected preferences within each course design feature. Second, based on the pilot study rankings, existing research, and consultation with university faculty members, the list of controllable course design features were reviewed and consolidated into fourteen salient factors to be examined. Third, a survey of the data was completed by 686 business administration students at a university in the southeastern United States during the fall 2005 semester. A copy of the student survey is included in the appendix. The fourteen course design preferences were supplemented by five demographic dimensions including gender, class level, hours per week of employment, age and grade point average.

The survey was administered as follows. The students were asked to rank the course design features from 1 to 14 based on the relative importance of each feature in terms of how they would select a course. These factors easily translate into student value driver priorities for course design by instructors. Each student was asked to consider the material as if they were taking a class within their major area of interest. For example, a finance major would apply the ranking to a finance class, while a marketing major would apply the rankings to a marketing class. These instructions were incorporated to minimize the impact of discipline-specific academic interests. The instruction to consider a desirable course in

https://doi.org/10.20429/ijsotl.2007.010218

their major reflects research that indicates student rankings may differ based on student major and the personal desirability of the course to their personal interests (Babad, 2003).

Associated with each course design parameter in the student survey are two alternative intensity levels. The intensity levels were designed to elicit differentiation in preferences for implementing each parameter. Students were asked to select one of two intensity levels for each course design parameter as a way of refining the analysis. Combined with the importance rankings, intensity level information will indicate specific value driver implementation preferences for students. This refinement will serve to identify what value drivers are important and how each could be implemented to enhance student value.

Statistical Analysis

Design Feature Rankings

A summary of the course design feature rankings is given in Table 1. The fourteen design features are listed in order of student-ranked importance. The average ranking for each feature was calculated from the survey responses. Associated with each average rank is the designation of a ranking group. While statistical analysis of ranked data can be troublesome, the research was designed to foster a thorough statistical analysis.

Table 1: Course Design Feature Rankings

Item Number/Description	Average Rank	Ranking Group
2 - Delivery style	4.72	1a
9 - Class Material/Test Relationship	5.12	1b
4 - Test Format	5.19	1b
1 - Topics/Test	5.66	1c
7 - Grade Expectations	5.80	1c
6 - Out of Class Work	7.30	2a
11 - Final Exam Coverage	7.35	2a
10 - Class Discussion/Participation	7.99	2b
3 - Attendance Policy	8.03	2b
12 - Grade % - Final Exam	8.36	2b
8 - Use of Technology	8.64	2c
5 - Research Paper	9.64	3
13 - Group Projects	10.39	4
14 - Grade % - Group Projects	10.75	4

For a large number of ranks ($k > 11$) and a large sample ($n > 30$), asymptotic distributions of rank statistics are approximately normal by the central limit theorem (Kim, 2005). For our study $k = 14$ and $n = 686$, so standard statistical analysis is appropriate. A standard ANOVA was completed revealing an $R^2 = 22.4\%$, indicating that the collective explanatory power of variation between features is weak, implying at least some statistical independence among the features. Simultaneous confidence intervals were calculated with a 95% family confidence level. The confidence levels for individual comparisons resulted in 99.92% confidence intervals for pair-wise comparisons of features.

The ranking groups in Table 1 reflect four groups whose average rankings were statistically different from other groups based on the aforementioned confidence intervals. Group 1

https://doi.org/10.20429/ijsotl.2007.010218

consisted of five features labeled 1a, 1b, and 1c. Although confidence intervals did overlap within the group (1a with 1b, and 1b with 1c), as a group the mean rankings are statistically significantly lower than those from any other group. Within group 1, confidence intervals indicated that subgroup 1a average rankings were statistically lower than those of subgroup 1c. Similar analysis was done within group 2 for subgroups 2a, 2b, and 2c. Confidence intervals elicited four major statistical groups from the fourteen design features. It is a reasonable inference that those features in group 1 are statistically more important to the students than those in any other group. From the students' perspective the groups are ranked 1-4 in order of most importance.

Design Feature Intensity

Table 2 indicates the student preference for the intensity level (direction of influence) of each design feature. The favored intensity level is highlighted and italicized. As a basis for quantifying that intensity, 99% confidence intervals were constructed for each proportion. The proportions were also tested to see if a statistical majority of students preferred one intensity level over another (H_a: $p_1 - p_2 \neq 0$). The associated p-values are also listed in Table 2. The intensity levels selected by the students indicate a clear preference for one intensity level over another for each of the design features. In each case the larger proportion (favoring that intensity) was at least 67%. The confidence intervals and hypothesis tests indicate that the preferred choice is a statistical majority of those sampled (all p-values are < 0.0001).

Design Feature Rank Correlation

Table 3 contains the Spearman rank correlation matrix. Spearman's rank correlation coefficient identifies the relationship between the rankings of the various design features (Lehmann, 1998; Spearman, 1904). This is not a measure of the relationship between the features, but rather a measure of the relationship between the rankings of features. A significant Spearman's correlation coefficient between the rankings of the various features would imply that the importance levels of the features are related. The coefficient is 0.41 between final exam coverage (feature 11) and the percentage of grade based on the final exam (feature 12). The coefficient is 0.55 between group projects (feature 13) and the percentage of grade based on group projects (feature 14). These two moderate relationships are rather intuitive as both pairs of features refer to the existence and level of grading importance of final exams and group projects. The rest of the coefficients are much smaller in magnitude. The low level of ranking relationship is not unexpected as the remaining features are not closely related in terms of implementation within a course. All are between -0.29 and 0.26 with the vast majority falling between -.20 and 0.20. The null hypothesis is that the feature rankings are independent. We cannot conclude that the rankings are statistically independent (p-value < 0.001). However, this conclusion is the result of the very large sample size. The magnitudes of the correlation coefficients indicate

Table 2: Course Design Feature Intensity by Ranking

Items (in rank-order)	Intensity 1 & Intensity 2	Intensity 1 Prop.	Intensity 1 99% C.I.	p-values
Delivery Style	Lecture only/ ***Variety***	0.135	(0.103,0.173)	< 0.0001
Material/Test Relationship	***Test repeats material***/ Analytical thinking	0.911	(0.878,0.937)	< 0.0001
Test Format	***Objective (MC/TF)***/ Subjective	0.861	(0.823,0.893)	< 0.0001

https://doi.org/10.20429/ijsotl.2007.010218

Topics per Test	***2-4 per test/*** 5-7 per test	0.948	(0.922,0.968)	< 0.0001
Grade Expectations	***A*** or B	0.848	(0.809,0.883)	< 0.0001
Out of Class Work	***<0.5 hrs. per class***/ 2 hrs. per class	0.865	(0.827,0.897)	< 0.0001
Final Exam Coverage	Comprehensive/ ***Non-comprehensive***	0.230	(0.189,0.275)	< 0.0001
Class Participation	***Voluntary/*** Compulsory	0.874	(0.838,0.905)	< 0.0001
Attendance Policy	Required/ ***Optional***	0.326	(0.279,0.375)	< 0.0001
Final Exam Grade %	40% or ***10%***	0.211	(0.171,0.254)	< 0.0001
Use of Technology	***Frequent/*** Seldom	0.756	(0.710,0.798)	< 0.0001
Research Paper	Required/ ***Not required***	0.085	(0.059,0.117)	< 0.0001
Group Projects	Required/ ***Not required***	0.330	(0.284,0.379)	< 0.0001
Group Project Grade %	40% or ***10%***	0.244	(0.202,0.290)	< 0.0001

Table 3: Spearman Rank Correlation Matrix

Features	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1													
2	.04	1												
3	-.02	-.10	1											
4	.13	-.03	-.11	1										
5	-.13	-.10	.03	-.10	1									
6	-.10	-.01	-.02	-.07	.15	1								
7	-.12	-.19	.04	.02	-.04	-.07	1							
8	-.04	.04	-.10	-.15	-.21	-.15	-.12	1						
9	-.05	.05	-.21	.03	-.19	-.01	-.05	-.02	1					
10	-.17	.09	-.20	-.14	-.22	-.06	-.16	.08	.14	1				
11	-.05	-.29	-.13	-.02	-.06	-.19	-.10	-.11	-.07	-.22	1			
12	-.11	-.28	-.13	-.12	-.08	-.15	-.12	-.16	-.16	-.15	**.41**	1		
13	-.19	-.12	-.19	-.17	-.05	-.13	-.15	-.07	-.17	.05	-.07	-.03	1	
14	-.19	-.16	-.21	-.21	-.08	-.22	-.15	-.10	-.23	.01	.05	.26	**.55**	1

(except for the two previously mentioned pairs of features) that the feature rankings, while statistically repeatable, are independent for practical decision making purposes. The largest proportion of the R^2 values are less than 4%, leaving 96% of the variation unexplained. For practical purposes one can assume that the design features are relatively independent. See Hahn (1993) for a discussion relating to the importance of statistical and practice differences.

https://doi.org/10.20429/ijsotl.2007.010218

Demographic Analysis

The survey responses were also analyzed by examining the demographic variables. Gender and class level were partitioned by the survey design. The work hours data was partitioned into two groups; 1) those working 10 or less hours per week, and 2) those working more than 10 hours per week. Age was partitioned into traditional college students (age 23 or younger) and non-traditional (age 24 or older). Grade point average was partitioned into low achievers (GPA < 2.5), average achievers (GPA 2.5-3.2), and high achievers (GPA > 3.2).

The design feature rankings showed minimal differences in average rankings, but no change in the ranking groups as compared to the entire sample. We conclude that the importance level of each ranking group does not vary with gender, class level, working status, age, or GPA.

A partitioned analysis of the intensity levels yielded similar results. No significant differences were found between any of the partitions with respect to the preferred intensity level. However, several statistical differences were noted in the magnitude of those preferences. Analysis by gender indicated that males more strongly preferred variety in delivery style (p-value = 0.011), voluntary participation (p-value = 0.013), and a non-comprehensive final exam (p-value < 0.001). Females more strongly preferred less out of class work (p-value = 0.003).

When partitioned by class levels several differences were found. Juniors (third year students) and seniors (fourth year students) more strongly prefer optional attendance (p-value = 0.005) and non-comprehensive final exams (p-value < 0.001) as compared to freshmen (first year students) and sophomores (second year students). Sophomores and juniors more strongly prefer objective tests than seniors (p-value < 0.001). Juniors and seniors have a stronger preference for less out of class work than freshmen (p-value = 0.006). Seniors have a stronger preference for higher grades than freshmen (p-value = 0.003).

Age-partitioned analysis yielded five significant differences in intensity level magnitudes. Non-traditional students felt more strongly about having fewer chapters per test (p-value < 0.001), greater use of technology (p-value = 0.006), and the exclusion of group projects (p-value = 0.023). Traditional students have a stronger preference for optional attendance (p-value = 0.002) and a stronger relationship between the test and the material (p-value = 0.02).

Partitioning based on GPA demonstrated a stronger preference by high-achieving students for not requiring research papers (p-value 0.026), higher grades (p-value < 0.001), and a lower percentage of grades based on the final exam (p-value = 0.009). Partitioning by working status yielded no significant differences.

While some of the partitioned results show statistically significant differences, they do not change the practical application of intensity levels in course design. Students generally agree on the preferred intensity levels. The only practical conclusion of these results is that the indicated preferences for intensity levels are common to all students, but critical to some. Faculty choices with respect to the intensity levels become even more important if the composition of the student body is skewed toward a particular demographic partition where stronger preferences prevail.

https://doi.org/10.20429/ijsotl.2007.010218

Analysis of Results

Implementing Student Preferences

The most important design component a business student wishes to be considered in course design is delivery style. This observation is quite significant as the results indicate that class time and engagement of the student trumps even the most fundamental rudiments of passing the class with a higher grade (ranked 5th). The preference level for delivery style is for a variety of class activities over lecture only. Satisfying this student preference does not require a compromise in the general academic rigor of a course or content coverage. Rather, the student seems to prefer the active engagement and participative learning environment of active learning oriented courses. Active course designs result in students perceiving their learning to be more meaningful to their future jobs (Wingfield, 2005). A variety of participative games and activities related to course content can be mixed into shorter lecture segments. A sample problem to be worked by individuals or small groups can be considered. Short group discussions to be followed by a short student/teacher question and answer period could be incorporated. Including these activities into the normal flow of a lecture is challenging, but their inclusion does not sacrifice academic content or student achievement. There is evidence to suggest that students exposed to active learning activities attend class more frequently and have positive reactions regarding the activities, while learning achievement is at least marginally improved (Butler, 2001 and Cahyadi, 2004). In this case, logic would imply that the business student has valid needs/concerns and reasonable expectations to have their preference met. These observations seem reasonably in concert with the well-known Seven Principles of Good Teaching Practice in Undergraduate Education (Chickering, 1987).

The second and third most important considerations in course design were the relationship between the class material presented/assigned and the test material and format. The intensity level of the class material/test relationship indicated that the students preferred testing material that was clearly covered in class with a minimum of test questions that required deductive or analytical thinking and reasoning. Apparently, business students want to see a clear reward for the effort spent learning the class material presented, indicating that difficult and obtuse tests seem to reduce student satisfaction with the course. Additionally, the test format preferred was objective (MC/TF) where the student has a clear choice of a limited number of right or wrong choices without having to be subjected to concerns about subjective essays without clear answers or mathematical problems with no opportunities to guess at answers to which they may have little chance of knowing. In these cases, the student demands and the academic goals of the instructor (and other stakeholders such as employers) may conflict. Some professors and most all employers expect students (employees or future employees and societal members) to be able to conceptualize complex problems, use analytical thinking to develop a multitude of answers based on subjective analysis and fuzzy quantitative numerical values, and choose a course of action based on those differing options – all within the context of a "subjective" environment.

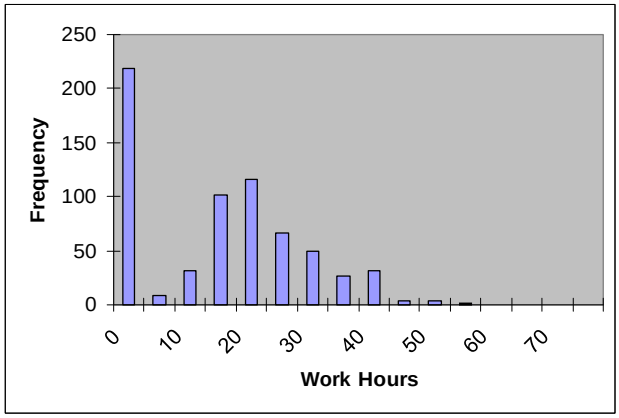
The fourth, fifth and seventh ranked items of student preference directly relate to grades and testing procedures. Business students would like more frequent tests over shorter course segments (ranked 4th) resulting in more frequent feedback while limiting the total quantity of test material covered. With respect to final exam coverage (ranked 7th) students favor a non-comprehensive final exam, logically following the student preference for having smaller and more frequent tests. Grades are obviously important (ranked 5th),

https://doi.org/10.20429/ijsotl.2007.010218

but are not the most important consideration in students' selection of course design characteristics as has been shown in some research studies. However, given the increasing influence of grade-based scholarships (for example, some lottery scholarships are maintained by exceeding a 3.0 GPA or other similar measure), the pressure for high grades is intense as state legislatures increasingly pass the cost of higher education on to the student and away from the general taxpayer base. Thus, for an academician meeting the goals of the student stakeholder, higher grades will result in greater student satisfaction. However, the awarding of higher grades may be in conflict with other pressures to maintain the academic rigor of courses based on instructor preference or administrative directive.

The amount of out of class work required by the class was the sixth most important consideration for business students. They also strongly loaded on the preference for little outside class work (0 to ½ hour per class) versus more outside class work (2 or more hours). Viable explanations for this concern and preference can be postulated by examining other factors in the database. College students at many universities today are working at part-time or full-time jobs in far greater numbers than are found historically. Many seasoned college professors were educated in a completely different system than they find themselves teaching today and simply do not realize the magnitude of the time demands on students. Figure 1 displays student work hours per week in part-time and full-time jobs. The histogram indicates that approximately 33% of the respondents were full-time students with no outside work responsibilities. However, the work hours of the remaining 67% of students exhibit a mound shaped distribution with mean 21.86 hours and standard deviation of 9.46 hours.

Figure 1



The results clearly indicate that the working student population must opt for the parameters of course design that require less outside time and preparation given the limitation on their total available time for course work. As state governments continue to transfer the cost of college from taxpayers directly to students, this proportion of working students can reasonably be expected to grow along with the corresponding number of work hours. In addition, while it may appear that non-working students may have ample time for course work outside the classroom, the truth may be far removed from that logic. Today's students are pressed to be active while in college. Those that are working can claim practical work experience on their resumes. Those not working must find other ways to compete resulting in substantial levels of activity in student organizations and service work.

https://doi.org/10.20429/ijsotl.2007.010218

These time demands are greater than ever for today's students. It is not surprising that demographic differences were not found based on work status. The time demands of those working through college and those with heavy extra-curricular participation levels directly translate to less time for out of class work.

The seven remaining items including class discussion/participation expectations, attendance policy, percent of grade based on the final exam, the use of technology, the requirement of a research paper, the expectations of group projects and percent of grade based on group projects were ranked in the lower half of the rankings (8^{th}-14^{th}). These factors ranked lower in business student value as course design value drivers, but still showed strong statistical preferences (p-values < 0.001) toward the following directions: voluntary class participation, optional attendance, lower percentage weighting of the final exam, regular use of technology, no research paper, optional group projects, and low grade weightings on group projects when required. Some of these preferences could be accommodated by the professors attempting to satisfy students' preferences without sacrificing significant academic integrity in the class. For example, some may feel that a research paper of significance is a necessary pre-requisite for demonstrating student proficiency in areas of independent formulation of problems, research, and writing reports. In other cases, professors would feel that following student wishes would not sacrifice academic quality. In either case, the implementation choices by faculty of less important course design features will likely have little impact on the value created for students.

Faculty Implications

Viewing the business student as a significant stakeholder in a total quality management framework forces faculty to consider incorporating into courses as many of the student course design features as possible in the rank-order suggested, following the student preferences and preferred levels of intensity. If the prevailing student teaching evaluations systems that permeate academia today force the professor to achieve high student ratings, then a course of direction to follow in course design is now far clearer. If other stakeholders besides students are not properly considered (e.g., employers, graduate schools, society in general), then some would argue that following the guidelines is generating good student evaluations, while fostering poorer student academic performance. Without concurrent modification of evaluation systems to include these other stakeholders, tenure pressures, merit ratings, and promotions will be primarily driven by meeting student demands regardless of ideological concerns about student development and long term academic experiences. Consequently, professors that continue to teach to their own preferences for course design parameters can easily understand that they are making a conscious decision to have lower student evaluations, and must balance those scores with the possible implications for performance-based outcomes given by administrators.

Classes need to become more effective and efficient. Business students seem to be pleading that the traditional use of class time be more participative and rewarding. Lectures of 50-75 minutes are simply too long for productive engagement of and retention of knowledge by today's students. If voluntary attendance at a church sermon of twenty minutes is too long for even a professor attending a church service, then semi-voluntary attendance at a class lecture of two to three times that long is obviously non-productive. A variety of well planned and choreographed activities will be greatly rewarding to the student in terms of effectiveness and efficiency. Given the limited number of hours of outside time available due to work/activity requirements, effective and efficient use of class time seems critical. Although such planning requires a great deal of front end development time, once designed to be effective and efficient, the material can be replicated with relative ease.

https://doi.org/10.20429/ijsotl.2007.010218

Anecdotal Results

Some faculty may have reservations regarding the implementation of student-aligned course design. The authors have begun to implement some of the student preferences in courses. While the sample sizes are still too small to demonstrate statistical results, the anecdotal evidence is substantial.

An upper level business course taught by the authors was selected for implementing some moderate course design changes. Prior to implementation the course had been designed with five of the fourteen features designed against student preferences, while nine features were already aligned with student preferences. Three course design features were manipulated in favor of student preferences: creating more variety in delivery style, converting tests to multiple choice and problems to strictly multiple choice, and redesigning coursework to foster more active use of class time allowing for less out of class assignments. These correspond to features that were ranking 2nd, 4th, and 6th most important to the students.

Four sections of the course were taught by the authors during two consecutive semesters. Course content and coverage remained the same. Students indicated that exams were challenging. Design changes were implemented voluntarily. The results were substantial. First, student achievement on exams improved slightly (beyond any probabilistic increases due to additional multiple choice questions). Second, written comments from student evaluations were uniformly more positive and substantially greater in number. Third, teaching evaluation averages rose substantially for both instructors. For one instructor stable averages of 3.8 out of 5.0 on teaching evaluations rose to an average of over 4.6 for two courses. For another instructor stable averages of 4.1 out of 5.0 rose to over 4.7 for two sections.

The initial indication is that student achievement is slightly enhanced with improved perceived course value and satisfaction when course designs were modified toward student preferences. These anecdotal findings are based on course designs incorporated without sacrificing academic freedom, course content, or academic rigor. Amazingly, the enhanced value and satisfaction of business students are the result of adopting only three of their design preferences while maintaining the same design implementation for the other eleven features.

Conclusions, Limitations, and Further Research

Judicious choices among course design features can be effective in enhancing student value, however such an analysis omits the fact that other stakeholders could play an important role in balancing the present emphasis where students' evaluations play a dominant role. Further analysis of the value drivers of other significant stakeholders needs to be performed so that a more balanced perspective on faculty teaching can be implemented.

The focus of this paper has been on course design using a student sample comprised of undergraduate business students. While the results and implications are clear, additional exploration needs to be done using other student populations to see if the results can be generalized, or if non-business or graduate populations see course design differently in terms of enhancing student value.

https://doi.org/10.20429/ijsotl.2007.010218

Additionally, larger societal issues need to be addressed as a consequence of this analysis. The continuing reduction of state and federal support as a percent of student fees and expenses naturally drives many students and families to have the student sacrifice potential study time for work time in an effort to finance college education. As long as this conflict exists, the dilemma of increasing student learning by increasing time on task will conflict with the need to work longer hours to pay for the education. At the present time, students are indicating that the value drivers that are important to them require that classes limit course difficulty and time required outside of class time. It is possible to design the controllable course features to meet student needs, but clearly changes to other parts of the educational system must accompany these efforts to enhance other aspects of student value.

Acknowledgement

This research was made possible in part by a University of Tennessee at Martin Faculty Research Grant from the Office of Research, Grants, and Contracts.

https://doi.org/10.20429/ijsotl.2007.010218

References

Babad, E, Darley, J and Kaplowitz, H (1999). Developmental aspects in students' course selection. **Journal of Educational Psychology**, 91: 157-168.

Babad, E (2001). Students course selection: Differential considerations for first and last course. **Research in Higher Education**, 42: 269-492.

Babad, E and Tayeb, A (2003). Experimental analysis of students' course selection. **British Journal of Educational Psychology**, 73(3): 373.

Butler, A, Phillmann, K and Smart, L (2001). Active learning within a lecture: Assessing the impact of short, in-class writing exercises. **Teaching of Psychology**, 28(4): 257-259.

Cahyadi, V (2004). The effect of interactive engagement teaching on student understanding of introductory physics at the faculty of engineering, University of Surabaya, Indonesia. **Higher Education Research and Development**, 23(4): 455-464.

Chickering, A and Gamson, Z (1987). Seven principles for good practice in undergraduate education. **AAHE Bulletin**, 39(7): 3-7.

d'Appolonia, S and Abrami, P (1997). Navigating student ratings of instruction. **American Psychologist**, 52: 1198-1208.

Feigenbaum, A (1983). **Total Quality Control** (3rd ed, p. 7). New York: McGraw Hill.

Greenwald, A and Gillmore, S (1997). Validity concerns and usefulness of student ratings of instruction. **American Psychologist**, 52: 1182-1186.

Greenwald, A and Gillmore, S (1997). No pain, no gain? The importance of measuring course workload in student ratings of instruction. **Journal of Educational Psychology**, 89: 743-751.

Hahn, G and Meeker, W (1993). Assumptions of statistical inference. **The American Statistician**, 47(1): 1-11.

Kim, J and Balakrishnan, N (2005). Nonparametric tests for independence between lifetimes and covariates from censored bivariate normal samples. **Communications in Statistics: Simulation and Computation**, 34(3): 685-710.

Lehmann, E and D'Abrera, H (1998). **Nonparametrics: Statistical methods based on ranks** (revised ed.). Upper Saddle River, New Jersey: Prentice Hall.

Martin, E (1989). The relationship among college student characteristics and their assigned importance to dimensions of course choices information. **Journal of College Student Development** , 30: 69-76.

McKeachie, W (1997). Student Ratings: The validity of use. **American Psychologist**, 52: 1218-1225.

https://doi.org/10.20429/ijsotl.2007.010218

Spearman, C (1904). The proof and measurement of association between two things. **American Journal of Psychology**, 5: 72-101.

Theall, M and Franklin, J. 1990. Student ratings of instruction: Issues for improving practice. **New Directions for Teaching and Learning**, 43. San Francisco: Jossey-Bass.

Tracy, D and Knight, J. 2005. Customer-driven value: Evolution and contemporary extensions, **Journal of Business and Economic Perspectives**, 31(1): 181-193.

Wingfield, S and Black, G. (2005). Active versus passive course designs: The impact on student outcomes. **Journal of Education for Business**, 81(2): 119-123.

https://doi.org/10.20429/ijsotl.2007.010218

APPENDIX

INSTRUCTIONS: Review the 14 course design features and then rank them in order of preference with 1 being the item most important to you when choosing a course within your major. Mark a 2 by your 2nd choice, a 3 by the third choice, and finally a 14 by the item least important to you in a course design feature. Please allow NO TIES. Once the ranking has been completed, mark a checkmark in the box to indicate your desired preference for each design feature preference.

			Design Feature Preferences			
Item No.	**COURSE DESIGN FEATURE**	**RANK**	Indicate your preference by checking one of the boxes for each course design feature.			
1	Number of topics/chapters per test		2- to 4 chapters/test		5-7 chapters/test	
2	Delivery style		Lecture only		Variety of activities, discussion, lecture, examples	
3	Attendance policy		Attendance required		Optional attendance	
4	Test format		Objective (MC/TF)		Subjective (Essays, problems)	
5	Research paper		Research paper required		No research paper required	
6	Out of class work (readings, assignments, etc.)		0-½ hrs/ class period		2 hrs/class period	
7	Grade expectations		A		B	
8	Use of Technology (Blackboard, Power point, etc.)		Frequent		Seldom	
9	Class material/ test material relationship		Tests repeat class material		Tests require analytical thinking	
10	Class discussion/ participation expectations		Voluntary participation		Compulsory participation	
11	Final exam coverage		Comprehensive final		Non-comprehensive final (unit test)	
12	% of grade based on final exam		40%		10%	
13	Group projects		Required		Not required	
14	% of grade based on group projects		40%		10%	

https://doi.org/10.20429/ijsotl.2007.010218

Gender: _____
Class Level (circle one): Fr. Soph. Jr. Sr.
Hrs. Employed/Week: _____
Age: _____
GPA: _____

https://doi.org/10.20429/ijsotl.2007.010218