

# **Do students know best when it comes to assessment? A best/worst analysis of assessment choices.**

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## **Abstract**

While much has been written on the nature of marketing assessment (Miller, Chamberlin and Seay 1991; Miller and Mangold 1996; Nonis, Hudson and Philhours 2005; Bacon and Anderson; Paladino 2008 and Pearce and Lee 2009), there has been little research on the type of assessments and weighting students would prefer. The nature of assessment can also affect learning outcomes and student satisfaction (Green 1997; Moberg and Watson 2003; Sampson, Bontia and Betters-Reed 2008; Welch 2009 and Pearce and Lee 2009). This paper uses Best-Worst scaling to examine assessment trade-offs made by students studying consumer behaviour. Students were asked to choose the best and worst assessment types using a incomplete balanced block design. Assessment choices included weightings for tutorial participation , a mid semester test, group project work and a final exam. Also included were whether the final exam or mid semester was multiple choice, short answer or a combination of both. It was found that while a majority (56%) of students preferred a final exam weighting of 40% with a mix of multiple choice and short answer questions, a 20% multiple choice mid semester, 10% participation mark and a 30% group project, there were three distinct segments of assessment choices. These segments were found to differ somewhat in terms of gender, hours worked and whether the student's secondary education was in English or not. Implication for marketing educators of the results is also discussed.

## **Introduction**

You don't understand anything until you learn it more than one way.  
- Marvin Minsky

The higher education sector in 2008 (the most recent complete figures) had enrolments of 1,066,095 students. Courses in management and commerce still appeared to be popular with an increase of enrolments in business in 2008 of 7.2% from the previous year of 2007 (Department of Employment and Workplace Relations, 2010). The most recent number of business students enrolled in Australian universities in 2008 was 297,565, which meant it remained the most popular choice of course for students. The Australian higher education sector whilst being an important social sector is an important industry for Australia. The value of Australia's export education industry in 2007 was about \$12.6 billion with around \$12.2 billion (97%) being derived on-shore from international students (RBA Bulletin 2008).

Despite the popularity of business courses, concerns exist, especially in marketing that students need to have appropriate learning outcomes and skills that are assessed so that it can be shown that students are work ready and have capabilities that employers require (Carson and Gillmore 1999; Baker and Keiline 2003; Dudley and Marlow 2005 and Treleaven, Voala 2008) . Balanced against this point of view, is the notion, that for learning to be successful students need to be involved in the process and this includes assessment (Green 1997; Bicen, and Laverie 2009 and Wetsch 2009).

The type of assessments used in marketing units are also likely to affect expectations, and student expectations are likely to influence teacher and unit satisfaction (Appleton-Knapp,

and Krentler 2006). As unit and teaching satisfaction scores are used by many universities to evaluate educational quality (though it is debateable if satisfaction measures quality), it is vital that lecturers understand the students views of assessment against the requirement of learning outcomes and capabilities expected of them as the result of their education.

## **Literature Review**

The choice of assessment design, linked to learning outcomes in marketing education has a rich history dating back to 1936. McGarry, (1936) argued that advertising executives and salespersons needed training in the scientific method in order to better understand the nature of marketing and sales campaigns. Miller Chamberlin and Seary (1991) noted the importance of varying assessments across a marketing program to encompass a range of desired learning outcomes. Glynn and Rajendran (1993) argued that student perceptions of assessment were a useful part of this process as it included measures of learning experience and involvement. McIntyre and Gilbert (1994) argued that assessment criteria needed to provide useful feedback not only for what was learnt, but important skills of learning, including creative problem-solving skills, thinking, and professional behaviour.

Some researchers and/or educators have gone further and directly involved students in the design of assessment. Green (1997) found that by using student generated exams, there was enhanced student currency in readings, increased involvement, and reduced the test anxiety. Eastman and Allen (1999) in a case study of curriculum review of a marketing department noted the success of the introduction of student-developed marketing plans, as an assessment. Although it appears that students are not good judges of their own performance. Kennedy, Lawton, Leroy (2002) noted that in regards to test performance poorer students significantly over estimated their performance; better students underestimated their performance. Poorer students became better estimators over time, while there was no similar improvement in better students' self-assessments. In other words, while we can consult with students about assessments, ultimately judgements of their performance and hence learning need to be made by the instructor. It is clear though that assessments which encourage experiential and cooperative learning, involve students and increase their learning (Munoz, and Huser 2008)

Sometimes different assessments may yield the same learning outcomes, although the time taken to complete each assessment type may differ. Bacon (2003) found that multiple choice questions compared to short answer questions a mid-term consumer behaviour exam had the same reliabilities and validities of measurement, even though mid-term tests with multiple choice questions were completed in a shorter period of time. Some marketing educators have argued that assessment needs to occur across marketing units, in order to show the value added or additional learning gained from the beginning to the end of the marketing degree (Fraser, Harich, Norby, Brzovic, Rizkallah, Loewy, 2005). The particular type of student attracted to the marketing discipline is also an issue for educators, as this will influence success and motivation against assessment criteria linked to learning outcomes in units. Aggarwal, Vaidyanathan and Rochford (2007) noted that in many U.S universities marketing students had poor levels of quantitative abilities both before and after their education, with that of other business majors. This suggest that while assessments may need to address these short comings in students in order to encourage their quantitative ability, this will be not be easy as the students may well have chosen a marketing degree because they have a weakness in quantitative or mathematical ability.

To summarise, it appears that student involvement in the design of assessment may improve learning outcomes and student satisfaction, (Aurand, and Wakefield 2006) but that assessment choices are ultimately the choice of the instructor, who must match assessments with the particular learning outcomes. This is because learning outcomes of the unit are ultimately mapped to graduate capabilities which are a requirement for the future employment of students and the accreditation of many business schools (Linrud, and Hall 1999; Nicholson, Barnett, and Dascher 2005 and Borin, Metcalf, Tietje 2008). This study examines as a starting point what kind of assessment rubrics students prefer for a consumer behaviour course. The results of the study were also communicated back to students at the end of semester and student choices were used by the instructor to design the makeup of the final exam. This study also examines how different cohorts of students may prefer different types of assessment. An issue, noted but not really addressed yet in detail the marketing literature (Nevett, Nimran, Viboonsanti, 1993).

### Method

Best-worst scaling (Finn and Louviere, 1992), is a conjoint analysis technique which asks respondents from a set of choices to nominate their most preferred option (the best) and also their least preferred option (the worst). Table 1 shows the type of assessments student were asked to examine in the study, or experimental treatments to be considered.

Table 1: Assessment profiles examined in the study.

Assessment	0%	10%	20%	30%	40%	50%	60%
Participation	x	x					
Mid Semester MCQ		x	x	x			
Mid Semester Short Answer		x	x	x			
Group Project	x	x	x	x	x		
Final Exam MCQs					x	x	x
Final Exam Short Answer					x	x	x
Final Exam Short Answer and MCQs					x	x	x

In order to reduce respondent demands an experimental design underlying the BWS questionnaire was based on a Balanced Incomplete Block Design with 12 sets of choices. The resultant data was then scored by the difference of the number of times each attribute (assessment combination) was rated as best by the number of times it was rated as worst. Each student's rating for each assessment choice is simply calculated by taking the number of times the student indicated this criterion to be most applicable and subtracting the number of times that the student indicated it as the least applicable across the four subsets in which that criterion occurred. Using the tallies for each student (ranging from -4 to +4 for each criterion). Hierarchical cluster analysis was then used to examine if there existed any clusters or groups of students with similar assessment preferences. In the current study hours of work and

whether the student had been schooled in English or not was also included as demographic variables.

## Results

The sample collected consisted of 391 undergraduate students in consumer behaviour class, a remarkable response rate of 89%. The sample was evenly split between genders, with 52% being male. 72% of the sample were aged less than 22 years, about half (48%) reported working less than 8 hours a week. 35% of the sample were schooled in a language other than English. Analysis of a scatter-plot showed no relationship between time to complete the survey and individual fit with the overall best worst scores. In order to ensure highly consistent responses only those respondents with an adjusted R-sq >0.8 (74%) or 290 cases were selected for the next stage of the analysis, which was a hierarchical cluster analysis. As shown in figure 1, The cluster analysis suggested that there were three segments based on assessment preferences.

**Figure 1: Clusters Analysis of Assessment Preferences.**

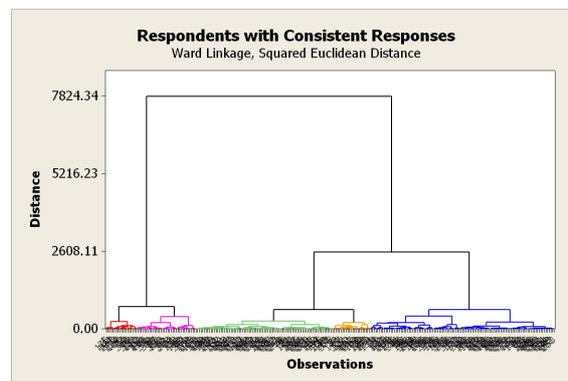
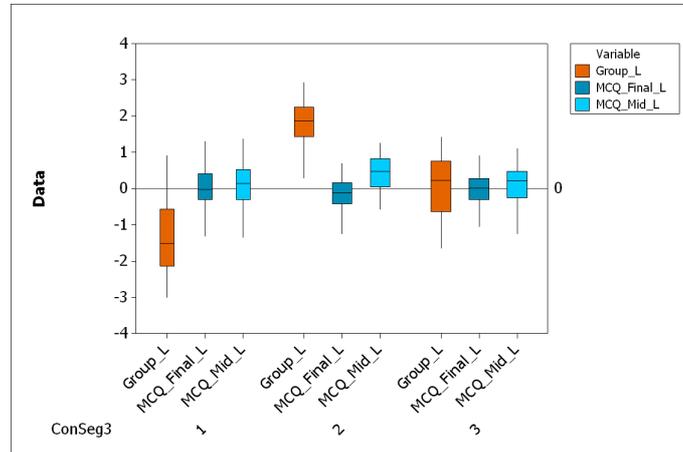


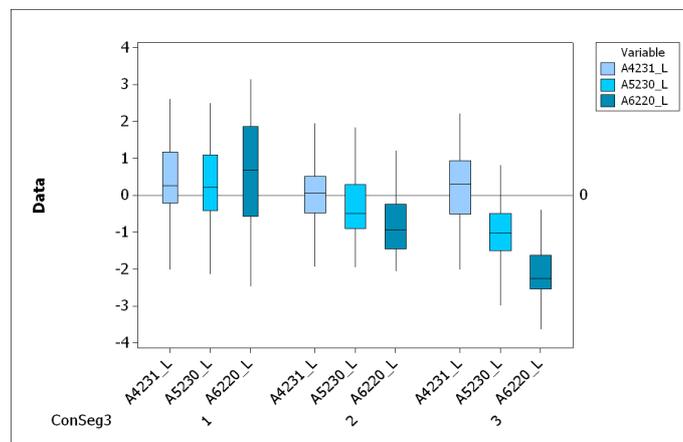
Figure 2, show a box and whisker plot for assessment types for each of the three groups. As can be seen the first segment has a low preference for group work as shown by the negative score, whilst the reverse is true for the second group and third group seems indifferent. Figure 3 shows the outcome for loading on assessments. The data are coded with the weight of the final exam, followed by that for group project, mid semester and tutorial participation. The first entry on the right therefore should be read 4231, or 40% final exam, 20% group project, 30% mid semester and 10% participation. As can be seen segment one in direct contrast to segment three prefers a 60% final exam. Group 2, preferred a 40% final, with a greater mid semester 20% and a larger group component 30%. As this group contained a large proportion of students from a non-English speaking background, 52% of total of non-English students, this assessment preference may reflect a desire for more collective or group learning style and the avoidance of the anxiety of having assessment which is exam based in another language. It should be noted though, that this preference for group work by this segment for group work, declines as the number of hours increased (Spearman's  $\rho = -.40$ ), this was also true across the student population (Spearman's  $\rho = -.33$ ). The other two segments were found to differ only in terms of gender and language of schooling. Segment 3, has a higher proportion of females 48% of the total female population, whilst segment 1 is smaller

(54 versus 111 for segment 1) but has roughly the same overall proportion of males and females.

**Figure 2: Box and Whisker Plot of Assessment preferences for Group-work, MCQ (final) & MCQ (mid-term)**



**Figure 3: Segments preferences for weights of Final, Mid-term, Project & Tutorial**



## Discussion

Student preferences for assessment types do differ between the weighting of the final exam and the use of group work. It appears that language of schooling combined with work commitments up to a point determines a preference for more group work. Other students, especially local students, though do not like to do group work or are indifferent. As all students have to be assessed in the same manner this paper shows the difficulty of providing a homogenous education to heterogeneous student population. One can only take a central position and partially meet all students' concerns. This turned out to be only for 56% of the students in the course and consisted of a 40% final exam, short answer and multiple choice, a 20% MCQ mid semester, a 30% group project and a 10% participation grade.

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