THE STUDENT PERSPECTIVE ON ASSIGNMENT ASSESSMENT: ELICITING PREFERENCES USING A DISCRETE CHOICE EXPERIMENT

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Structure of Session

- Background to the Study
- Methods of Eliciting Student Preferences
- Experiment Design and Implementation
- Results
- Applications

- Background to the Study
  - Online versus Paper Assignments
    - End of Course Examination Scores
    - Assignment Scores, Completion Rates, and a Student Survey
  - An Alternative Method of Eliciting Student Preferences
- Methods of Eliciting Student Preferences
- Experiment Design and Implementation
- Results
- Applications

BACKGROUND TO THE STUDY

No evidence that a student's examination performance depended on the format on which they took the assignment.

Completion rates were higher for online assignments
Marks were higher for paper assignments

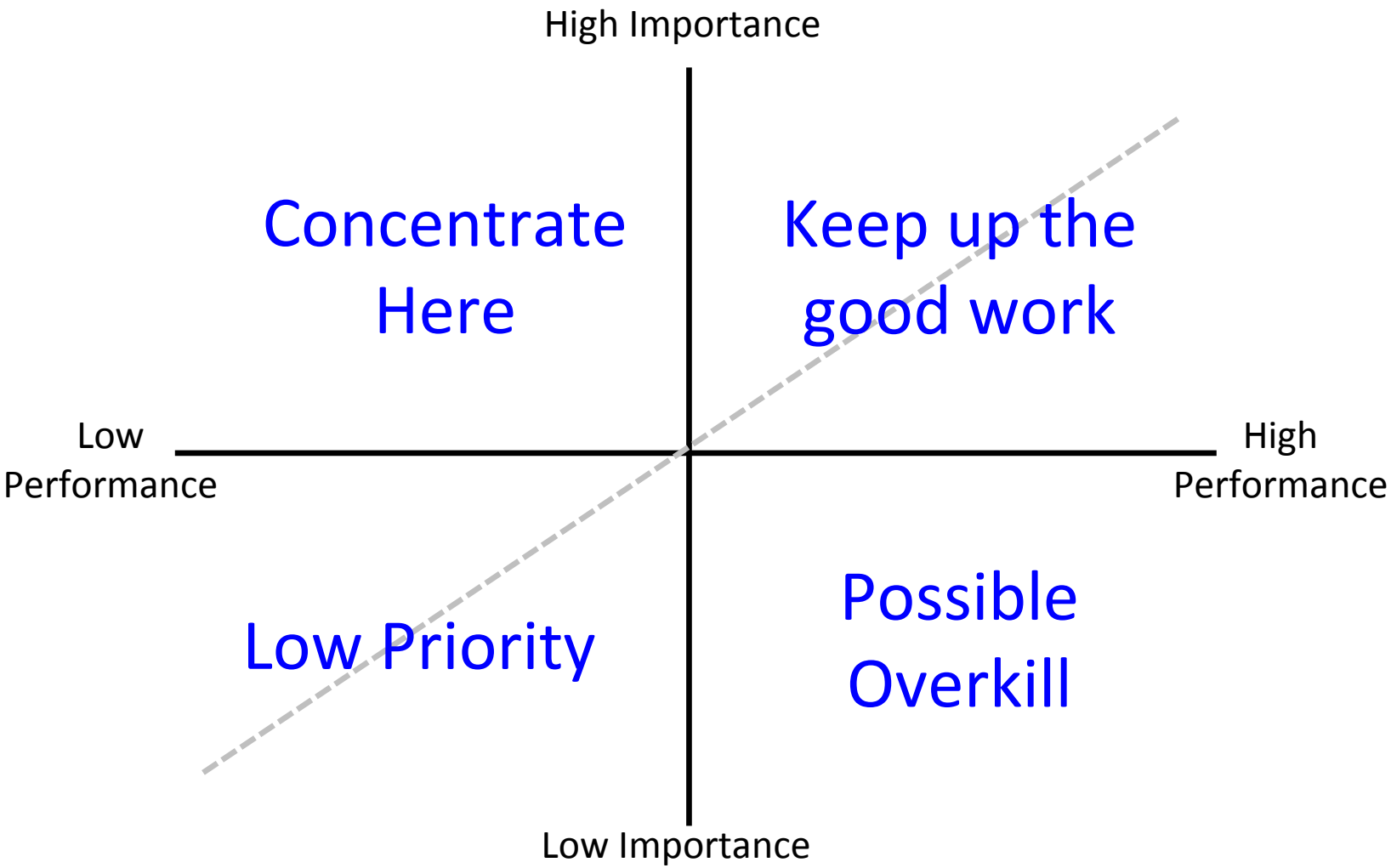
Then there was the student survey results that indicated student preferred online assignments systems.

A more "scientific" approach to student preferences.

- Background to the Study
- Methods of Eliciting Student Preferences
  - Assessment Preference Inventory
  - Performance-Importance Analysis
  - Best-Worst Scaling
  - Discrete Choice Experiments
- Experiment Design and Implementation
- Results
- Applications

METHODS OF ELICITING STUDENT PREFERENCES

PERFORMANCE-IMPORTANCE ANALYSIS



METHODS OF ELICITING STUDENT PREFERENCES

BEST-WORST SCALING

	Teaching Attribute
1	A lecturer communicates effectively with students (e.g. he/she explains things clearly).
2	A lecturer stimulates my interest in the subject matter he/she teaches.
3	A lecturer encourages me to think critically.
4	A lecturer provides helpful feedback to help me learn.
5	A lecturer encourages student input and participation during classes.
6	A lecturer is generally helpful to students.
7	A lecturer is well prepared and structures the subject matter well.
8	A lecturer helps me to improve my understanding and/or skills in this subject area.
9	A lecturer communicates his/her enthusiasm for the subject area.

METHODS OF ELICITING STUDENT PREFERENCES

BEST-WORST SCALING

Most	Attribute	Least
	A lecturer encourages me to think critically.	
	A lecturer is generally helpful to students.	
	A lecturer communicates his/her enthusiasm for the subject area.	

Most	Attribute	Least
	A lecturer stimulates my interest in the subject matter he/she teaches.	
	A lecturer is well prepared and structures the subject matter well.	
	A lecturer is generally helpful to students.	

METHODS OF ELICITING STUDENT PREFERENCES

DISCRETE CHOICE EXPERIMENT

Attribute	OPTION A	OPTION B
A lecturer encourages me to think critically.	A lot	A little
A lecturer is generally helpful to students.	Yes	Yes
…..	…	…
Cost	€5	€0
SELECT YOUR PREFERRED OPTION		

The addition of a monetary amount as an attribute is crucial.

- Background to the Study
- Methods of Eliciting Student Preferences
- Experiment Design and Implementation
  - Focus Group
  - Pilot Study (55 students)
  - Full Study (122 students)
- Results
- Applications

EXPERIMENT DESIGN AND IMPLEMENTATION

Attributes	Levels	Description
Nature of Feedback	High	Complete answers to all of the questions are provided and an explanation of each student's mistakes is also provided
	Moderate	Brief answers to all of the questions are provided
	Low	There is no feedback
Exam Relevance	High	Most of the questions on the assignments help in exam preparation
	Moderate	About half of the questions on the assignment help in exam preparation
	Low	Few of the questions on the assignment help in exam preparation
Assignment Type/Form	online with graphic interface	The assignment is done online using a system with an interface that requires the manipulation of graphs in answering the questions
	online without graphic interface	The assignment is done online but without an interface that allows the manipulation of graphs in answering the questions
	paper assignments	The assignment is done on paper by hand or on a computer and is handed to the lecturer/tutor or handed in to a department office

EXPERIMENT DESIGN AND IMPLEMENTATION

Attributes	Levels	Description
Practice Assignments Provided	Yes	before each assignment the student has access to a fully worked out practice assignment that has questions that are very similar to those on the graded assignment
	No	There are no practice assignments
Speed of Getting One's Result on an Assignment	Fast	The student can find out her/his mark within 24 hours of the deadline for the assignment
	Moderate	The student gets her/his mark within one week of the deadline
	Slow	The student gets her/his mark more than one week after the deadline has passed
Money cost	0, 5, 10, 20, 35, 45, to 60 Euro	This money is <u>over and above</u> any regular college fees that the students have to pay.

EXPERIMENT DESIGN AND IMPLEMENTATION

SAMPLE CHOICE CARD

	Assignment System A	**Assignment System B**	**Assignment System C**
Nature of Feedback	**High** (complete answers to all of the questions are provided and an explanation of each student's mistakes is also provided where mistakes have been made)	**Moderate** (brief answers to all of the questions are provided)	**Moderate** (brief answers to all of the questions are provided)
Exam Relevance	**Moderate** (about half of the questions on the assignment help in exam preparation)	**Low** (few of the questions on the assignment help in exam preparation)	**Low** (few of the questions on the assignment help in exam preparation)
Assignment Form/Type	**Paper Assignments**	**Online without Graphic Interface**	**Paper Assignments**
Practice Assignments Provided	**No**	**Yes**	**No**
Speed of Getting Back Result of Assignment	**Fast** (the student gets mark within 24 hours of the deadline for the assignment)	**Slow** (the student gets mark more than one week after the deadline has passed)	**Slow** (the student gets mark more than one week after the deadline has passed)
Additional cost of Assignment System.	**€60.00**	**€5.00**	**€0**
Please tick the one option you prefer most.	☐	☐	☐

EXPERIMENT DESIGN AND IMPLEMENTATION

	Assignment System A	Assignment System B	Assignment System C
Nature of Feedback			**Moderate** (brief answers to all of the questions are provided)
Exam Relevance			**Low** (few of the questions on the assignment help in exam preparation)
Assignment Form/Type			**Paper Assignments**
Practice Assignments Provided			**No**
Speed of Getting Back Result of Assignment			**Slow** (the student gets mark more than one week after the deadline has passed)
Additional cost of Assignment System.			**€0**
Please tick the one option you prefer most.			☐

49 alternative assignment systems were included on the choice cards

Status Quo option (or base case)

- Background to the Study
- Methods of Eliciting Student Preferences
- Experiment Design and Implementation
- Results
  - Conditional Logit Model (Willingness to Pay)
  - Latent Class Estimates (Willingness to Pay)
- Applications

RESULTS

Conditional Logit Model Estimates of Preferences for Assignment Attributes

Variable	Coefficient
Assignment Price	-0.028 (.002)***
Nature of feedback is high	0.651 (.079)***
Nature of feedback is moderate	0.458 (.078)***
Exam relevance is high	1.418 (.089)***
Exam relevance is moderate	0.972 (.077)***
Assignment form - online with graphical aids	0.183 (.074)**
Assignment form - online with no graphical aids	0.173 (.075)**
Practice assignment is available	0.293 (.055)***
Speed of getting back assignment result is fast	0.293 (.076)***
Speed of getting back assignment result is moderate	0.224 (.073)***
Alternative specific constant	-0.076 (.1)
Log likelihood	-2099.86
Pseudo R2	0.08
AIC	4221.78
BIC	4283.85
Obs	2124

RESULTS

Conditional Logit Willingness to Pay Estimates for Attributes of Assignments

	WTP (€)
Exam relevance is high	51.41 (3.70)***
Exam relevance is moderate	35.22 (3.13)***
Nature of feedback is high	23.62 (2.90)***
Nature of feedback is moderate	16.59 (2.88)***
Practice assignments available	10.60 (2.05)***
Speed of getting back assignment result is fast	10.60 (2.78)***
Speed of getting back assignment result is moderate	8.10 (2.67)**
Assignment form - online with graphical aids	6.63 (2.69)**
Assignment form - online with no graphical aids	6.20 (2.68)***
Alternative specific constant	-2.77 (3.64)

RESULTS

Latent Class Willingness to Pay Estimates

	Class I	Class II	Class III
Exam relevance is high	185.57 (63.95)***	32.02 (2.49)***	6.62 (8.22)
Exam relevance is moderate	130.92 (45.48)***	23.87 (2.06)***	1.1 (8.31)
Nature of feedback is high	68.06 (23.12)***	16.90 (2.13)***	10.90 (7.74)
Nature of feedback is moderate	65.44 (24.69)***	9.87 (2.2)***	7.50 (7.35)
Practice assignments available	40.21 (16.40)**	4.50 (1.58)***	4.87 (6.32)
Speed of getting back assignment result is fast	30.73 (14.68)**	4.34 (2.20)*	4.10 (6.85)
Speed of getting back assignment result is moderate	45.75 (19.30)**	5.36 (1.89)***	-16.90 (8.30)**
Assignment form - online with graphical aids	29.26 (15.70)*	6.19 (2.34)***	-15.80 (8.18)*
Assignment form - online with no graphical aids	28.74 (15.20)*	5.33 (2.27)**	-18.10 (8.31)*
Alternative specific constant	-0.98 (0.23)***	-0.99 (0.23)***	0.44 (0.28)

- Background to the Study
- Methods of Eliciting Student Preferences
- Experiment Design and Implementation
- Results
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  - Paper System
  - Non-Graphical Interface System (Blackboard)
  - Non-Exam Relevant

APPLICATIONS

	Scenario 1 (Paper)	Scenario 2 ("Blackboard")	Scenario 3 (Non-Exam Relevant)	Base Case
Nature of Feedback	High	Moderate	High	Moderate
Exam Relevance	High	Moderate	Low	Moderate
Assignment Form	Paper Assignments	Online without Graphic Interface	Online with Graphic Interface	Paper Assignments
Practice Assignments Provided	No	No	Yes	No
Speed of Getting Back Result of Assignment	Moderate	Fast	Fast	Slow

APPLICATIONS

	Scenario 1	Scenario 2	Scenario 3
Latent Class I	103.09 (14.70)***	59.48 (29.44)**	-28.03 (33.97)
Latent Class II	20.67 (3.31)***	9.68 (3.05)***	-1.61 (4.20)*
Latent Class III	-16.98 (8.33)***	-18.16 (8.31)**	-15.79 (8.18)*
Weighted Average Across LC Model	42.93 (14.75)**	22.88 (9.91)**	-15.34 (13.05)

SUMMARY

Discrete Choice Experiments offer an alternative method of eliciting student preferences.

It facilitates the expression of student demand for attributes of education (in our case assignment systems in economics).

The results of our DCE on assignment systems, with the exception of the speed of feedback, conform to *a priori* expectations.

In terms of technology, it seems student want (and are willing to pay) for greater use of technology in education.