



**FORM FOR SUBMITTING FULL PROPOSALS FOR CONSIDERATION  
FOR THE  
2013 ROBERT J. MENGES HONORED PRESENTATION AWARD**

**Instructions:**

- Boxes will expand to accommodate text
- Total word count must not exceed 2000 words for the body of the proposal (excludes appendices).
- Please be sure to include the word counts in each section, as well as the total for all sections (see below). Proposals without the word counts noted will not be read.
- Incomplete proposals will not be read.

<b>YOUR NAME:</b>	<b>INSTITUTION:</b>	<b>EMAIL:</b>
Donna Ellis	University of Waterloo	donnae@uwaterloo.ca
<b>TITLE:</b>	<b>Why Students Avoid Risking Engagement with Innovative Instructional Methods</b>	

**1. RESEARCH QUESTION(S) & WHY THEY ARE IMPORTANT TO THE FIELD:**

Current higher education research literature encourages faculty members to change their teaching and assessment methods as a means of improving student learning, but these methods have not been widely adopted, making them instructional innovations (Christensen Hughes & Mighty, 2010). These innovative methods are typically more learning-centred, focusing on students and their learning more than teachers and their teaching; overall, they promote students being more involved in and responsible for their learning (e.g., active learning methods such as inquiry-based learning). Given that these methods are often new or not expected for students, not all students willingly engage with them, preferring to avoid the risk and uncertainty that come with a new learning situation (Pepper, 2010; Reimann, 2011). Resistant behaviours from students are a common response (Keeney-Kennicutt, Gunersel & Simpson, 2008; Weimer, 2002), and may include refusal to participate in class, complaints to department chairs, and low course evaluation scores (Kearney & Plax, 1992). This resistance can discourage faculty members from trying new ways of teaching and may detract from educational developers’ credibility with their clients when their recommended methods are not well received by students.

An exploratory, qualitative research study was conducted to investigate why students may resist engaging with instructional innovations as a first step in determining how such resistance may be mitigated. In this conference research session, one of three research questions is reported on:

**What are students’ barriers to change for a course that uses innovative instructional methods, beginning from the outset of the course through to the end, and which are most salient?**

Other questions were asked in this project regarding student variables that could affect the possibility of resistance as well as differences between faculty member and student perceptions, which increased the scope of the research project.

**WORD COUNT****291****2. DESCRIPTION OF RESEARCH DESIGN:**

In exploring why students resist engaging with learning-centred methods, an embedded case study design was employed (Yin, 2009). One course was the overall unit of analysis, but an embedded design was used in that two sections of the same course, which were taught by the same instructor, were studied simultaneously, and within these sections, individual students were interviewed to serve as individual cases within the larger case study.

This research focused on two sections of a second-year Economics course held at a research-intensive university. The course employed four different innovative instructional methods: interactive lectures, extensive group work (80% of grade), choice of group assignments, and random attendance checks to promote responsibility to group members. Based on criterion-based purposeful sampling (Patton, 2002), the course was selected because it: included instructional methods that were learning-centred and differed from the lecture and exam method typically used in the Economics department; had large enrolments of students from different years of study and programs; and had an experienced faculty member who had witnessed student resistance to the instructional methods.

Data were collected at different points throughout the term via different methods, providing the opportunity for data source and methods triangulation as well as prolonged engagement in the field as means of establishing validity. Recording equipment was used and transcriptions produced for all interviews, and field notes were kept for all observations, which provided means of demonstrating reliability in data collection. The data collection methods are outlined below:

Start of Term	During Term	End of Term
Instructor interview	Instructor interview	Instructor interview
Document collection (past course evaluations, course outline, assignments)	Classroom observations	Document collection (current term's course evaluations)
Student questionnaires (n=113/148) – response rate of 76%		Student questionnaires (n=116/126) – response rate of 92%
		Student interviews (n=17)

All data collection instruments and protocols were original to this study. The primary data collected focused on what would encourage and discourage students' willingness to engage with innovative instructional methods; this balanced perspective was chosen to avoid biasing the students against the course. A total of 172 unique students, from second- to fourth-year, participated in this case study.

In keeping with case study methodology (Yin, 2009) and modified grounded theory (Corbin & Strauss, 2008), a preliminary conceptual framework of possible reasons for student resistance was developed based on an extensive literature review (see next section). Data from the questionnaires were coded first, initially without reference to the preliminary conceptual framework to allow *in vivo* codes to emerge directly from the data. In this line-by-line coding (Charmaz, 2004), discrete ideas within each response were the unit of analysis, with each idea being categorized under only one code, but

complete responses were listed under each applicable code to keep the responses intact. The codes were cross-checked for discreteness and for their connection to the preliminary conceptual framework and were revised as needed. Focused coding was undertaken to create larger themes (Charmaz; Miles & Huberman, 1994), and this revised codex was used to code the remaining data to check for accuracy and literal replication of the codex (Yin). Further content analysis was performed by counting the frequencies of the various codes from the questionnaire data as a means of explicitly identifying their prevalence and looking for emerging patterns, and visual models were developed to assist in distilling the findings (Miles & Huberman). Memo-writing (Charmaz) assisted with the data analyses.

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### 3. LITERATURE REVIEW & THE RELATIONSHIP OF THE LITERATURE TO YOUR RESEARCH QUESTION(S):

The research area was identified as an example of a change management situation. As a result, Lewin's (1948/1999) classic force field analysis model was used as an underlying theoretical framework to help guide the focus of the research. Lewin indicated that driving forces push towards a change while restraining forces push back in opposition (p.280). To make a change, one can increase the driving forces or decrease the restraining ones; Lewin recommends the latter to minimize tension (p.280). As a result of this empirically based finding from Lewin, this research focused on identifying students' restraining forces or barriers to change, which was operationalized as what would discourage their willingness to engage with innovative instructional methods. Literature on organizational resistance to change was also reviewed (Erwin & Garman, 2010), which helped to limit the focus to contextual factors that instructors may be able to influence within one term of study versus more stable dispositional factors.

Very limited literature exists that strives to create a comprehensive framework of students' barriers to change in relation to novel instructional methods. Some studies appear limited in their design and/or analysis (Albers, 2009; Pepper, 2010; Reimann, 2011) or are still under development (Tolman & Sorensen, 2012). As a result, a number of articles that investigated specific possible variables in relation to students' willingness to engage with learning-centred instructional methods were reviewed in order to create a preliminary framework to use as an initial codex for analyzing the research data collected. The data reported on in these articles stemmed from students and/or faculty members. Table 1 in the appendix displays a composite of the literature reviewed for this research study in relation to eight preliminary barrier themes: Experience with Methods, Incoming Instructional Conceptions, Incoming Learning Skills, Environmental Constraints, Perceived Risks, Perceived Workload, Influence of Others, and Context-Specific Motivation. The themes were divided according to whether they were predicted to be pre-existing or in-situ. A fishbone diagram (Ishikawa, 1982) was created to visually display the predicted barriers to change and further analyze the findings.

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#### 4. FINDINGS: THEIR SIGNIFICANCE & LIMITATIONS:

In keeping with the case study methodology used, four research propositions were identified to guide the data collection and analyses. For this conference session, two of the propositions are addressed:

*P1: The barriers underlying students' responses to innovative instructional methods that are outlined in the preliminary conceptual framework can be linked to empirical evidence from students.*

*P2: Students have both pre-existing and in-situ barriers to change which influence their potential resistance to innovative instructional methods.*

P1 was found to be mostly supported. Of the eight preliminary themes identified, one was not supported (Incoming Skills) and one new theme emerged (Context-Specific Risk Tolerance). Various codes were also revised to better reflect the data collected. Overall, eight themes, 18 codes, and 35 properties were identified from the case study data; a revised conceptual framework appears in the appendix in Table 2. These findings suggest that numerous reasons may exist within one course regarding why students may resist engaging with innovative instructional methods. P2 helps to reduce the possible barriers for instructors to address.

P2 was also mostly supported in that the prevalence of the codes shifted from the start of term to the end – the time of term mattered regarding what was most important to the students. However, almost all of the same codes were present at both the start and end of term, which refutes the idea that students would have discrete and different barriers to change at different times of the term. Only the codes from the Environmental Constraints theme did not appear at the start of the term; all other codes were present in both time periods.

To further distill the findings, the reasons to discourage engagement that were provided by those students who were least willing to engage with at least one of the instructional methods studied were analyzed according to frequencies and proportions. These data were viewed as the most relevant to attend to since this student cohort would be the group most likely to actively resist novel instructional methods. A synthesis of these findings, which includes representative quotations from the students, appears in the appendix (see Table 3), along with a revised fishbone diagram (see Figure 1). Based on these analyses, it was determined that the key barriers are as follows:

Start of Term	End of Term	Both Start and End of Term
Effect on Grades	Class Time	Methods Preferences
Clarity	Autonomy	Required Time
	Acceptable Methods	Peers

When these findings are further distilled, two main overarching themes emerge: risk of negative consequences and perceived lack of control. These themes suggested a possible linkage to Fishbein & Ajzen's (2010) reasoned action approach model of behavioural change, a link which was explored in the larger research study.

Overall, the key barriers suggest that instructors need to identify ways to limit the risk to students' grades and give them an increased sense of control regarding the course. Confronting traditional

instructional norms may also be needed to help minimize students' barriers to change. For example, instructors could provide an initial grading of an assignment to show how it would have been graded were it a final submission. Or they could run a short interactive large-class lecture and then debrief with the students about what encouraged and discouraged their engagement with the discussion as a means of confronting students' beliefs about acceptable instructional methods and learning from their peers. In general, instructors could use the barrier framework to help identify what they need to attend to when designing a course that uses innovative instructional methods. Educational developers should be able to help instructors interpret the framework in relation to their students and their course and provide ideas for activities and practices that could help to address the various barriers identified.

The primary limitation of this research is that the findings are based on one course at one institution. However, an embedded design was used and students from multiple years of study and all six Faculties at the University of XXX were involved in this research. Other limitations include that only one data coder analyzed the data and participant data-checking (from students) was not used, but iterative coding was used and the data analyses have been reviewed and accepted by the course instructor and experts from the academic community.

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<b>TOTAL WORD COUNT FOR ALL 4 SECTIONS:</b>
<b>1889</b>

**(Include appendices, below)**

**Table 1: Preliminary Conceptual Framework based on Literature Review**

Possible Barriers to Change	Proposed Variables to Describe Barriers	Literature Sources
<b>PRE-EXISTING BARRIERS</b>		
Experience with Methods	Year of study	Messineo et al. (2007)
	Familiarity with innovative instructional method(s)	Doyle (2008), Felder & Brent (1996), Kember (2001), Michael (2007), Reimann (2011), Thorn (2003), Windschitl (2002)
	Academic discipline	Keeney-Kennicutt et al. (2008)
	Preferences regarding past instructional methods	Alessio (2004), Felder & Brent (1996), Kember (2001), Messineo et al. (2007), Windschitl (2002)
Incoming Instructional Conceptions	Beliefs about: Students' roles and responsibilities Instructors' roles and responsibilities Acceptable course formats	Albers (2009), Bruner (1996), Doyle (2008), Elen & Lowyck (2000), Felder & Brent (1996), Hockings (2005), Kearney & Plax (1992), Keeney-Kennicutt et al. (2008), Kember (2001), Mallinger (1998), Messineo et al. (2007), Michael (2007), Thorn (2003), Weimer (2002), Windschitl (2002)

Incoming Skills for Learning	Perceived need to develop new skills to engage with a teaching or assessment method (e.g., public speaking skills for a discussion; writing and synthesis skills for an e-portfolio)	Albers (2009), Allen et al. (2001), Doyle (2008), Felder & Brent (1996), Handelsman et al. (2005), Kaufman & Schunn (2011), Keeney-Kennicutt et al. (2008), Kember (2001), Michael (2007), Thorn (2003), Windschitl (2002), Woods (2003)
<b>IN-SITU BARRIERS</b>		
Environmental Constraints	Classroom design	Hockings (2005), Michael (2007)
	Class size	Hockings (2005), Michael (2007)
Perceived Risks	Perceived effect on learning	Keeney-Kennicutt et al. (2008), Lewis & Hayward (2003)
	Perceived effect on grades	Albers (2009), Alessio (2004), Allen et al. (2001), Doyle (2008), Felder & Brent (1996), Handelsman et al. (2005), Kaufman & Schunn (2011), Keeney-Kennicutt et al. (2008), Lewis & Hayward (2003), Marsh & Penn (1988), Pepper (2010), Reimann (2011), Svinicki (2004), Windschitl (2002)
	Perceived emotional risk (fear, stress, anxiety)	Alessio (2004), Felder & Brent (1996), Keeney-Kennicutt et al. (2008), Kember (2001), Mallinger (1998), Pepper (2010), Weimer (2002), Woods (1994)
Perceived Workload	Perceived time to use the method	Albers (2009), Alessio (2004), Elen & Lowyck (2000), Hockings (2005), Keeney-Kennicutt et al. (2008), Lewis & Hayward (2003), Marsh & Penn (1988), Michael (2007), Reimann (2011), Weimer (2002)
	Difficulty of method	Lewis & Hayward (2003), Lowyck et al. (2004), Reimann (2011)
	Perceived clarity of instructor's explanations and instructions	Albers (2009), Allen et al. (2001), Doyle (2008), Elen & Lowyck (2000), Felder & Brent (1996), Keeney-Kennicutt et al. (2008), Kember (2001), Lewis & Hayward (2003), Marsh & Penn (1988), Pepper (2010), Reimann (2011), Thorn (2003), Windschitl (2002)
	Observability of expected outcome(s)	Keeney-Kennicutt et al. (2008)
	Perceived instructor skill with new method	Allen et al. (2001), Keeney-Kennicutt et al. (2008), Michael (2007), Pepper (2010)
Influence of Others	Perceived connection with instructor	Allen et al. (2001), Elen & Lowyck (2000), Handelsman et al. (2005), Kearney & Plax (1992), Pepper (2010)
	Perceived willingness of classmates to adopt new method	Felder & Brent (1996), Lewis & Hayward (2003), Windschitl (2002)
Context-Specific	Self-efficacy	Handelsman et al. (2005), Weimer (2002)

Motivation	Autonomy over learning	Lewis & Hayward (2003), Messineo et al. (2007), Reimann (2011), Weimer (2002)
	Level of interest in course	Handelsman et al. (2005), Lewis & Hayward (2003)

**Table 2: Revised Conceptual Framework of Student Barriers to Change**

Themes	Codes	Properties
Experience with Methods * Academic Discipline and Year of Study removed – may be latent variables for various themes	Methods Preferences	Preference for conventional instructional methods
		Dislike of conventional methods
		Dislike of specific methods beyond conventional methods
	Familiarity with Innovative Method(s)	General dissatisfaction with past new methods experienced
Instructional Conceptions	Acceptable Methods (now includes Student Role & Instructor Role)	No previous experience with instructional method
		Inappropriateness of the method in a post-secondary course
		Inappropriateness of the method based on discipline-based beliefs about course content
Incoming Skills	Insufficient data – theme removed	Inappropriateness of the method based on beliefs about roles of students and instructors (some discipline-based, some not)
Risk Tolerance	Openness to Change	Lack of willingness to experience a new method
	Tolerance for Ambiguity	Presence of uncertainty
		Lack of certainty about new method
Environmental Constraints	Class Size	Class is too large
	Class Time	Class is too early
Perceived Risks	Effect on Grades	Negatively affects grades
		Importance of grades
		Lack of incentives
		Lack of fairness in grading
	Effect on Learning	Negatively affects learning
		Lack of relevance to course goals
	Emotional Risk	Uncomfortable in front of others
		Feelings of stress/anxiety
Fear of being incorrect		
Perceived Workload	Difficulty	Difficult/complicated methods
	Clarity	Unclear methods
		Lack of support given to use method
	Time Required	Too much time needed to learn or use method
		Time spent lacks utility
Lack of convenience		

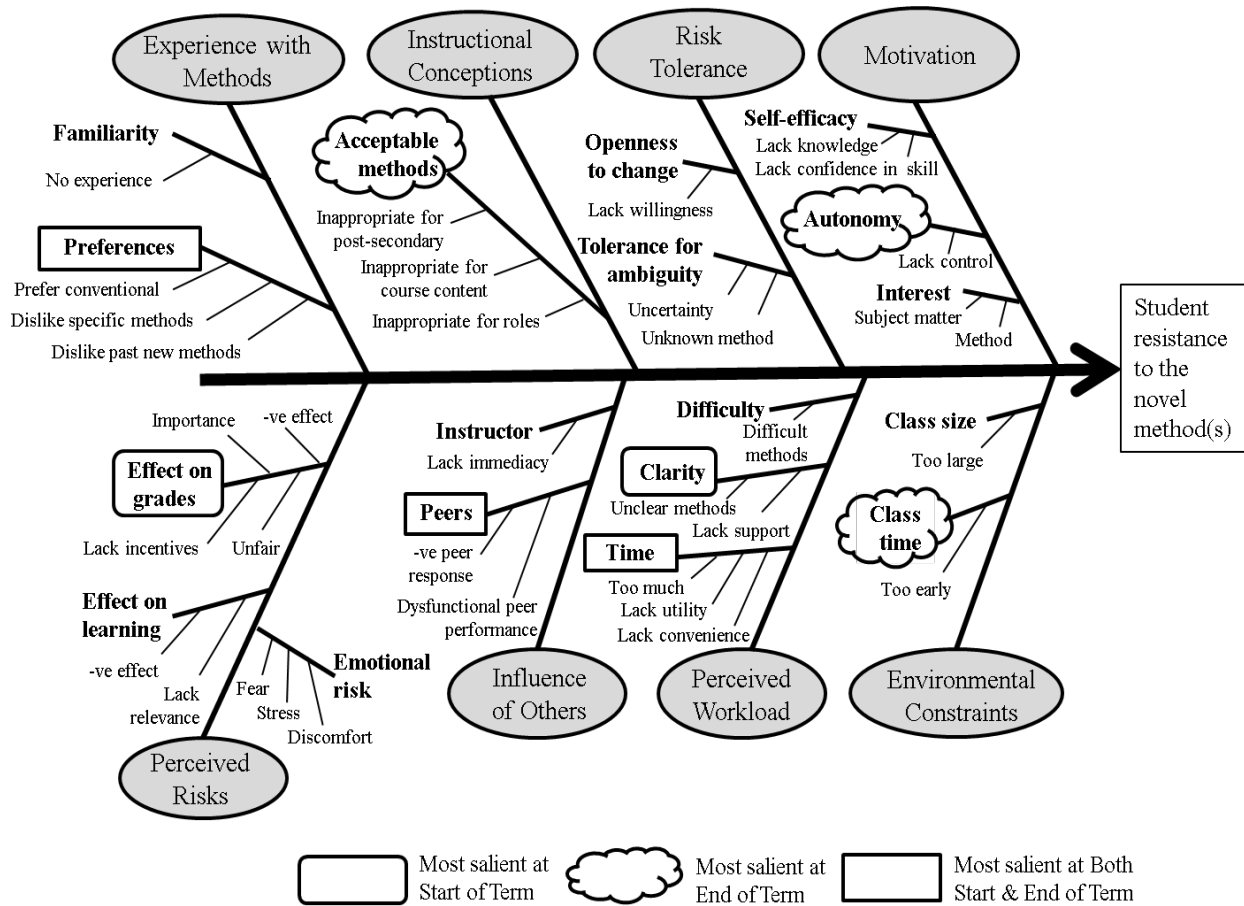
Influence of Others	Influence of Instructor	Lack of immediacy behaviors
	Influence of Course Peers	Negative responses of peers
		Dysfunctional peer performance with method
Context-Specific Motivation	Interest	Lack of interest in instructional method
		Lack of interest in course subject matter
	Autonomy	Lack of control over learning environment
	Self-Efficacy	Lack of confidence connected to skill
		Lack of confidence connected to background content knowledge

**Table 3: Most Salient Barriers to Engaging with an Innovative Instructional Method**

	Start of Term		End of Term	
<b>Most Frequent Codes from Least Willing Students</b>	Methods Preferences n=14/68 (21%)	"I dislike group work" (A1)	Peers n=25/67 (37%)	"I really don't like group work, as I tend to end up doing most of the work" (B18)
	Effect on Grades n=13/63 (21%)	"I approach different grading styles with great caution because of the unknown bringing increased chances of poor performance" (B53)	Class Time n=21/42 (50%)	"It's also early in the morning. Not a morning person" (A37)
	Time Required n=10/49 (20%)	"Took more time WHY? Because I don't have spare time" (B80)	Autonomy n=19/36 (53%)	"I also don't like to give up that much control" (B66)
	Clarity n=9/29 (31%)	"A method which would create more work or confusion for the students" (B5)	Time Required n=15/45 (33%)	"Group work is less efficient than individual work" (A23)
<b>Highest Proportion Codes from Least Willing Students</b>	Clarity 31% (n=9/29)	"I don't like to be assessed in a manner I don't understand" (B40)	Acceptable Methods 82% (n=9/11)	"This is university – it should be my own work and I should not have to rely on other students" (B17)
	Peers 27% (n=3/11)	"If you are matched with a bad group you could receive a mark unrepresentative of your individual abilities" (A3)	Methods Preferences 75% (n=9/12)	"I don't like interacting in class. I prefer straight lectures where I don't have to participate if I don't want to." (B18)



**Figure 1: Summary of Key Barriers to Engaging with Innovative Instructional Methods**



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