

## THE SPOT INSTRUCTOR ADJUSTMENTS TO STUDENT INTERESTS

Lauren L. Ferry\*

Ph.D. Candidate

Department of Political Science, University of California, San Diego

lferry@ucsd.edu

\*Corresponding author

Maxie Gluckman

Ph.D. Student

University of California, San Diego

magluckm@ucsd.edu

Jace Hargis

Ph.D., Clinical Professor of Teaching and Director, Center for Teaching

NYU Shanghai

jace.hargis@nyu.edu

### ABSTRACT

This study uses a new methodological technique to evaluate how instructors in a quarter long professional development course designed for new instructional assistants (IAs) modified their lesson plans in response to revealed student interests. Ethnographic data collection revealed to researchers that there was significant variation in student interests across course subjects. It also revealed that the instructors leading the professional development program made numerous adjustments to their original plans -- some of these adjustments occurring within the same class period. This paper builds on these insights to demonstrate that instructors respond to both implicit and explicit student cues about what students are interested in and engage with. It further provides a typology of potential instructor reactions. When students reveal their interests, instructors can choose (1) not to modify; (2) to change their examples to those that students will find relevant; (3) to reallocate their agenda for the class; or (4) to incorporate student interests into future lesson plans. This work seeks both to broaden the literature to incorporate new techniques for collecting student information and to encourage future work about how instructors use of this information.

### INTRODUCTION

Deeper learning requires students to make connections in the context of a mental framework. Drawing connections to experiences outside of the classroom can be an integral part of incorporating new knowledge into an existing mental structure, thereby facilitating student learning (National Research Council, 2000). In the classroom context, this suggests that instructors must make decisions about when to incorporate individual interests, how to navigate a multitude of different interests, and whether to adapt their lesson plans in light of student interests.

In line with this existing research, observational data collected in the context of a professional development course providing practical skills to new Instructional Assistants (IAs), revealed that there was significant variation in student interests across course topics (Author, 2017). In response, staff instructors leading different sections of the course made numerous modifications to their original lesson plans--modifications that differed greatly depending upon each instructor's teaching style. Critical reflection on student interests led to quick, "on-the-spot," adjustments in the span of the same class session. This insight led to the investigation of the following questions through a pilot study.

1. When do instructors make "on the spot" decisions to modify their lesson plans?
2. What do "on the spot" adjustments look like? What forms can they take?

More specifically, it is difficult to observe and measure how instructors make these types of instantaneous decisions in the classroom environment, perhaps illuminating why this is a novel investigation. It is challenging in two dimensions: (1) observing the cues and data that instructors access when they make internal decisions; and (2) acknowledging when modifications are actually taking place. To overcome this challenge, this study relied on ethnographic data collection, gathered by a series of Graduate Student Researchers (GSRs) in the

“Teaching Center” (TC)<sup>1</sup>. GSRs were provided with access to the lesson plan and presentation materials beforehand, allowing them to observe when students “leaned into” a particular topic and how the instructor reacted to their interest.

Thus, at a finer level, this work utilizes a new technique to draw attention to the incorporation of student interests and the simultaneity of instructor decisions. As a reaction to new methods of collecting student data, this project explores how student data can be incorporated. While, prior research has demonstrated the importance of instructor reflection and adjustment between classes and across classes, this project also allows data to be used within a single class period (Bain et al. 2002). The results presented below represent an initial pilot study carried out in two “Teaching as New Instructors” classes for first time Instructional Assistants.

## LITERATURE REVIEW

### *Why incorporating student interests is important*

Students incorporate new information into existing mental frameworks (National Research Council 2000). This suggests that drawing connections to experiences outside of the classroom can be an important tool to deepening student understanding. One way to understand which outside experiences will provide relevant connections to draw upon is to determine student interests. Thus, students’ interests, “play an important role in intrinsically motivating behavior in that people naturally approach activities that interest them” (Deci & Ryan 1985).

This study focuses on the concept of individual interests, as differentiated in the literature as the connection between a person and a particular topic (Renninger, 2000). As compared to situational interest, which explores how conditions trigger new interests, individual interests are a long-lasting disposition. As interests are incorporated, knowledge and value structures become more integrated (Hidi & Renninger, 2006). This implies that as students make connections to material that they find personally interesting they are more motivated to assimilate the new understanding and develop deeper comprehension (Schiefele, 1991; Pintrich, 1999). Early work in educational psychology found that external attempts to make a subject interesting only lead to short-lived comprehension. Only internal interest made subjects more likely to identify with the material and improve comprehension (Dewey, 1913). Modern work lends more credence to the importance of interest, demonstrating that interest increases the depth of comprehension and self regulated learning (Schiefele, 1991; Kraap, 2002, 2005; Hidi & Renninger 2006; Boekaerts & Boscolo 2002) and that interests in combination with future goals increases student studying (Mikkonen et al., 2009).

### *Why student interests are difficult to gauge and measure*

Yet, gauging real time student interests on a topic is a difficult task. Most basically, instructors can ask students what their interests are and which topics they want to cover. However, this method relies on students being comfortable enough to speak up. Instructors have also used minute papers, reflective journal writing, and concept mapping as ways of assessing student engagement, interests and learning. Technology based Student Response Systems (SRS), such as clickers, PollEverywhere.com, and Kahoot have been another tool educators have put forward to gather data on students during an individual class session (Hall et al. 2005).

While these methods have all demonstrated success in various contexts, they require the instructor to explicitly ask for feedback from their students. They involve a prompt on the instructor’s behalf. Yet, instructors rely on a mix of tools to gather information about their students - some that are explicit methods, while others are more implicit. Instructors ask for feedback on student interest and engagement, but they also read the room for nonverbal cues. It is a combination of techniques that allow instructors to triangulate interests, engagement and understanding.

Finally, while many studies have attempted to remedy *how* instructors can better collect high-quality and instantaneous student data, less has been done on what instructors do with that information. This paper attempts to address that gap by developing a typology of instructor responses to revealed student interests.

## METHOD

As part of a larger study conducted by the “Teaching Center” (Author, 2017), the Center placed ethnographic observers in two “Teaching as New Instructors” classes during the fall of 2017. GSRs conducting the ethnographic study were initially tasked with determining what questions were arising that were relevant to the

<sup>1</sup> We have given our center a pseudonym in an effort to anonymize the institution in which the “Teaching Center” resides for the purposes of review and publication

Center's objectives. The ethnography pilot described in Author 2017, led the Center to investigate the role of on-the-spot instructor adjustments.<sup>2</sup>

Once GSRs identified this specific research area, they continued collecting ethnographic data with a specific focus to better understand which stimuli cause instructors to make on-the-spot adjustments and how these adjustments impact student engagement and learning. GSRs used the "participant-observation" model of ethnographic research (Spradley, 2016; Wax, 1980; Jorgensen, 1989). Through this method, GSRs attempted to experience class as one of its members and approximate their reactions. During each of sixteen class sessions, one GSR served as a full participant and another served as a full observer. Detailed field notes were collected by hand for the first four sessions, and later digitally transcribed. Given that many of the participants in the Survival Skills Foundation course used laptops themselves, GSRs switched to taking notes on laptop computers after the fourth session. The participants did not seem distracted by the change in note taking technology.

Furthermore, each of the staff instructors leading the course provided their lesson plans and instruction materials to GSR observers in advance of each class session. In these materials, instructors provided information on the topics they expected to cover, the activities they planned to use, and their expected timeline. From these plans, GSR observers were able to identify when deviations occurred. GSRs also paid particular attention to timing during each class, to allow for more accurate comparisons.

Finally, the course provided ample opportunities for both student and instructor reflections to be collected as supplementary materials. At the end of each class session, students completed a quick Post-It Note observation. They were asked to provide responses to the following prompts, which address Knowledge, Skills and Disposition:

1. A one sentence summary of the session
2. One idea that they might use in their own teaching
3. One word that describes how they feel

Students' answers were collected and digitized at the end of each class session by GSRs. Students in the Wednesday section also participated in a Small Group Perception Study (SGPS), administered by the Teaching Center during Week 4. Specifically, The SGPS was administered by GSRs while the instructor was absent from the room. The GSR divided students into groups and asked them four questions.

1. What is contributing to student learning in class? (What is going well?)
2. What might need improvement to enhance student learning?
3. What is one concrete action which the instructor can act upon now that might improve learning?
4. Share one word how this course makes you feel now.

Students were asked to talk about their responses first, then write them down as a group. The GSR collected student responses, anonymized and aggregated them. The results were then shared with the instructor.

In addition, both instructors and the GSRs spent five minutes reflecting on the class in a shared document. There was no specific formula for instructor responses, but they did generally follow a similar theme. Instructors tried to identify how the class session went, why it went that way, and what evidence they used to make those evaluations.

## **SETTING**

This study was conducted within a new course offering from the Teaching Center at a large research intensive university located in the southwestern part of the United States. This was the first time the course, "Survival Skills for Instructional Assistants" had been taught. Two sections of the course, one on Wednesdays and one of Thursdays, met at the Center for one-hour sessions over eight weeks. During class sessions, instructors shared evidence based teaching strategies. Students then had the opportunity to practice each strategy and to reflect on their own experiences in the classroom.

## **PARTICIPANTS**

Each section of the Survival Skills course had three participants. The Wednesday section of the course involved students from Literature, Oceanography and Biology. They will be referred to under the pseudonyms Jasmine,

<sup>2</sup> Additional projects were also developed out of this initial ethnographic data collection. See Author (2017) on the ethnographic method.

David, and Braylon. Jasmin is a third year Ph.D. student. David is in the final year of his Ph.D. program and Braylon is a first-year Ph.D. student. The Thursday section of the course involved students from Biomedical Sciences, Music, and Cognitive Science. They will be referred to under the pseudonyms Courtney, Raven, and Fernando. Courtney is in her third year of graduate school. She was fulfilling a one-semester teaching requirement for her PhD program funding. She was simultaneously taking another six-week workshop for new IAs that was required by her department. Raven and Fernando are both first year Ph.D. Students. All six students had no prior instructional or assisting the instructor experience and were taking the course on a voluntary basis.

Additionally, both sections of the Survival Skills course were taught by a different instructor. The Wednesday sections were led by a female member of the Center, who held a background in elementary and bilingual instruction. She will be referred to as Instructor Mary. The Thursday sections were led by a male member of the Center, whose background is in instructional design. He will be referred to as Instructor Patrick. Both instructors had prior classroom experience, but as the course was new, neither staff member had previously taught this particular offering. The instructors shared preparatory material, but each modified their own curriculum to suit their professional style.

## RESULTS

### ***Research Question 1: When do instructors make “on the spot” decisions to modify their lesson plans?***

Initial results indicate that instructors are very responsive to the incorporation of student interests, even when they were unplanned. Moreso, on the spot modifications occur based on both implicit and explicit cues, that teachers can observe without specifically prompting for feedback. For example, implicit cues like facial expression and enthusiasm factor into an instructor’s choice to modify. Ethnographic notes included observations of students taking notes, or leaning forward to read text on a slide, both of which demonstrated interest. Notes also reveal instances where students check their mobile phones, their watches, sighed, or stared out the window. These implicit cues can be interpreted as disinterest.

Additionally, students also provided explicit cues in the form of questions, clarifications, and requests for more information, all without specific prompting by the instructor. For example, during a class discussion on active learning strategies, David asked Instructor Mary for more information on other strategies that they did not have time to practice in class. He mentioned that half of the course material could be about active learning strategies. This type of explicit cue could be interpreted as a sign of interest in a particular topic.

It is important to note that during this study, instructors reflected on their own ability to gauge student interests and engagement. Instructor and GSR reflections after each course section were replete with phrases like “One student spent much time writing and [another student] was on her laptop actively accessing the resources [Instructor Mary] kept referring to”, “...only one time did I see someone look at their phone” and “ everyone volunteered answers without being called on.” The supplementary evidence collected from instructor reflections suggests that instructors are aware of observing both implicit and explicit engagement cues. They are responsive and they do use revealed student interests in their decision making process. With continued data collection in Spring of 2018, the Center plans to develop a qualitative coding scheme of these cues. How instructors use these cues is addressed in the following section.

### ***Research Question 2: What do “on the spot” adjustments look like? What forms can they take?***

To understand what adjustments look like, we identified four categories of actions instructors could take to incorporate student interest and developed a typology of potential responses. Instructors could:

- (1) choose not to modify their lessons plans;
- (2) change their examples or application in light of students’ interests;
- (3) change the agenda and give more time and prevalence to topics where students are highly engaged; and
- (4) incorporate student feedback into their lesson plans going forward.

These categories are not mutually exclusive and instructors in our pilot study used a combination of all four types.

#### *No modification*

First, instructors could choose not to modify their prepared lesson plans and keep their lesson plans in tact and on-track. This may be an especially relevant option for instructors when students reveal interests that are only tangentially related to the topic at hand. Because the study has conducted in small and personable settings, examples of this type of modification were limited. However, as one GSR noted in their reflection of the first class session, “Instructor Mary was really good at keeping to her time limits that she set, but the activities

seemed to come to abrupt halts, to some students' chagrin." Because the course offering was new, Instructor Mary prioritized covering all the planned material and sticking to the prescribed agenda. This type of strategy relaxed in subsequent sessions, as students became more comfortable expressing their interest preferences and instructors were more willing to make modifications. We expect this type of strategy to be more important in large, diverse classes.

**Figure 1.** Incorporation of revealed student interests.

*Shifting examples and application to fit student interests*

Second, instructors can incorporate their knowledge of student interests by reworking their examples in light of what is most engaging from the student's perspective. For example, Instructor Patrick introduced storyboarding as an active learning technique. To demonstrate how this might work, the instructor explained the process in light of Courtney's struggle to move her class from memorization to a higher level of mental synthesis. Instructor Patrick said, "I wonder how that could work, you said that you put a graphical organization to it. Maybe they're the ones who should have done the work. That can be an activity in and of itself." He went on to talk through what the storyboarding process would look like, entirely in the context of Courtney's class.

In another class session, involving the discussion of Appropriate, Relevant and Meaningful (ARM) educational technology, Instructor Patrick used Raven's experience with the Student Response System program "Kahoot" to provide more clarification. Students had expressed confusion over what qualifies as ARM technology and in his answer, Instructor Patrick first explicitly mentioned that Raven had tried "Kahoot" in her sections. He started the explanation by asking Raven "How did it work in your class?" Raven reported a positive response from her students, mentioning that they were particularly engaged. Instructor Patrick then elaborated on Raven's experience to demonstrate how this is a case of ARM technology. He explained that,

*"When you press the button, you get the right answer, then it starts counting who gets the answer quickest...that's a piece of ARM tech that you use. If I was to say to you, go ahead, and use this other piece of technology, like paper and pencil, that could have been kind of counterintuitive, it could have distracted from the goal...your 'Kahoot' was absolutely relevant, it helped you achieve your goal in the end of getting students involved."*

*Shifting current planned agenda to account for student engagement*

Third, there was also evidence that instructors changed their planned agenda when they observed that students were "leaning in" to a particular topic. Rather than cutting students off to get to the proscribed material, instructors could allow conversations to occur organically by re-allocating their time. In one class, students seemed particularly interested in sharing their reflections from teaching sections the previous week. Instructor Patrick allowed reflection time, which was allocated for 5-7 minutes, to stretch for 14 minutes given that students were highly engaged with each others' reflections and asking questions and giving suggestions to each other. In response, Instructor Patrick had to make an important adjustment. He allowed conversation to continue and then said, "I'll tell you what we are actually going to do. We were going to grab some Post-It notes and head outside...to do an empathy activity to understand our students...but we will emulate this experience here instead." Instructor Patrick reallocated his time and agenda to areas where students were highly engaged.

In that same class, incorporating student interests into the lesson plan also meant going over the allotted class time. In a later discussion of the fixed/growth mindset both Courtney and Fernando were asking questions, physically leaning in, and taking copious notes as the class watched and discussed a video on Carol Dweck's TED talk (2014). Halfway through the video, the class session ended. Instructor Patrick asked if the students could stay, then carried on the conversation, even moving the class to another room for an additional 15 minutes.

*Incorporating student feedback and interests to shift future class meetings*

Fourth, the pilot revealed evidence that incorporation of students' interests also carried over to later class sessions. In her own reflections during Week 2 Instructor Mary noted that "[student] reflections were thoughtful and honest and the conversation continued for about 10 minutes and could have gone longer." She provided a similar reflection again in week 3, stating that "unfortunately, that is when the time ran out, luckily this is part 1 of 2 on designing questions and facilitating discussion." In this particular example, Instructor Mary modified the lesson plan going forward after week 3 to allow more time on fewer topics in each subsequent session. As the course progressed, ethnographic notes reveal that Instructor Mary allowed more time for the specific discussion of students' teaching reflections and experiences. The allotted time for student reflections shifted from 5-7 min to 10-15 minutes by the end of the course.

## DISCUSSION

To help students make connections to existing mental frameworks, instructors must make decisions about when and how to incorporate individual interests. This project attempts to describe and differentiate the ways in which instructors make these “on the spot” adjustments to their lesson plans. With this goal, we acknowledge that the types of modifications instructors use will vary greatly depending on the instructor’s teaching style. We simply strive to provide suggestions on what incorporating student interests might look like in four categories:

- (1) No modification;
- (2) Changed example;
- (3) Changed Agenda; and
- (4) Future Incorporation.

This research acknowledges that instructors make adjustments all the time and that they are already aware of the adjustments they make. This work does not suggest that instructors should adjust more or less, but is instead an effort to categorize the adjustments that instructors are already making. This research also remains ambivalent to the merits of one technique in comparison to another. In fact, instructors in the study used multiple techniques within the same class period. The categories are not designed to be mutually exclusive or exhaustive, but rather suggestive as a way to think about how to use student information.

Instead, this project’s primary contribution is to meet the rise in studies on student data collection with a new ethnographic method and a new focus on how to use collected information. First, this work points to the role of research ethnography in analyzing future questions on which it has been difficult to gather data on in the past. Ethnography can provide insight into the plethora of information instructors take in during each class period. It is particularly adept at providing observations in the classroom environment that aren’t explicitly prompted by the instructor. Second, this project suggests that instructors are cognizant of their efforts to incorporate student interests, yet respond in different ways. They are incorporating these interests into their classes, both simultaneously and retrospectively. This initial dialogue into how instructors use student information should prompt future work on how instructors can match their student data collection efforts with adjustments in their teaching.

This pilot study was performed in the context of a new program offered by the Teaching Center. Thus, the sample of students in this study were ones who sought out the aid of the Center of their own. The instructors in both sections were also Center employees, well trained in pedagogical professional development. While this may suggest that students may express more interest in the material or that instructors may be more adept at incorporating student interests, it is unlikely to be the case. While students did self-select into the course, they came from significantly different academic and personal backgrounds. They also expressed interest in a diversity of topics, with significant heterogeneity. Both instructors had different teaching styles and there was no suggestion that they operated the class any differently than they would in another venue. Identification and measurement will only get more precise as the study progresses to a larger sample.

Thus, to further this research agenda, the Teaching Center plans to continue the study in the Spring of 2018. As more ethnographic data becomes available, the authors hope to develop a qualitative coding scheme of the cues instructors respond to and the actions they respond with. Furthermore, as this is an instructor focused project, the Center plans to conduct interviews with instructors after each class session, to gain a better understanding of why the instructors chose the adjustments they did. Most importantly, the Center endeavors to move closer to understanding how instructor incorporations of student interests affect student learning outcomes. This will be the explicit focus of the research agenda moving forward.

## REFERENCES

- Bain, J.D., Ballantyne, R., Mills, C., & Lester, N.C. (2002). *Reflecting on practice: Student teachers' perspectives*. Flaxton, Qld: Post Pressed.
- Boekaerts, M., & Boscolo, P. (2002). Interest in learning, learning to be interested. *Learning and instruction*, 12, 375–382.
- Deci, E.L., & Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behaviour*. New York, NY: Plenum.
- Dewey, J. (1913). Interest and effort in education. In J.A. Boydston (Ed.), *Essays on philosophy and psychology, 1912–1914. The middle works of John Dewey: 1899–1914* (Vol. 7, 151–197). Carbondale, IL: Southern Illinois University Press.

- Hall, R., Collier, H., Thomas, M., & Hilgers, G. (2005). A student response system for increasing engagement, motivation, and learning in high enrollment lectures. *Proceedings of the American Conference on Information Systems*, 621-626.
- Hidi, S., & Renninger, K.A. (2006). The four-phase model of interest development. *Educational Psychologist*, 41, 111–127.
- Jorgensen, D. (1989). *The methodology of participant observation*. Thousand Oaks, CA :Sage Publications
- Krapp, A. (2002). Structural and dynamic aspects of interest development: Theoretical considerations from an ontogenetic perspective. *Learning and Instruction*, 12, 383–409.
- Krapp, A. (2005). Basic needs and the development of interest and intrinsic motivational orientations. *Learning and Instruction*, 15, 381–395.
- Mikkonen, J., Heikkilä, A., Ruohoniemi, M., & Lindblom-Ylänne, S. (2009). I study because I'm interested: University students' explanations for their disciplinary choices. *Scandinavian Journal of Educational Research*, 3, 229-244.
- National Research Council (2000). *How people learn: Brain, mind, experience and school: Expanded edition*. J.D. Bransford, A.L. Brown & R.R. Cocking (Eds.), Washington DC: The National Academies Press.
- Pintrich, P.R. (1999). The role of motivation in promoting and sustaining self-regulated learning. *International Journal of Educational Research*, 31, 459-470.
- Renninger, K.A. (2000). Individual interest and its implications for understanding intrinsic motivation. In C. Sansone & J.M. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation*. San Diego, CA: Academic Press.
- Schiefele, U. (1991). Interest, learning and motivation. *Educational Psychologist*, 3-4, 299-323.
- Spradley, J. P. (2016). *Participant observation*. Long Grove, IL: Waveland Press.
- Tanner, K. (2012). Promoting student metacognition. *CBE Life Sciences Education*, 11, 113-120.
- Wax, M. L. (1980). Paradoxes of “consent” to the practice of fieldwork. *Social Problems*, 27(3), 272-283.