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What If They Choose: Surfacing Insights Associated with a Pedagogy for Doctoral Education

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WIP: What if they choose: Surfacing insights associated with a pedagogy for doctoral education

Introduction

Is it possible to create a doctoral learning experience that is grounded on participants reading what they choose? Why would this be of interest? What could this look like? There are practical reasons to be interested in such a proposition. Having doctoral students read what they themselves have chosen ensures a baseline of personal relevance. Having the same students read what they choose creates a mechanism for their reading to stay current. Having students read what they choose means the instructor gets to delegate a difficult task--that of choosing readings. Alongside the potential benefits, having students read what they choose could also create cacophony. Thus, a learning experience in which students read what they choose needs to be designed.

The work presented in this paper is anchored in a set of ten learning experiences where a key part of the learning experience was having students read what they chose. Much like an ethnography where having sustained engagement in the field adds rigor to the results, this work benefits from such sustained engagement. Further, the continuation of the experience suggests that the experiences were providing value since a ten year period provides many opportunities for such a learning experience to cease to be offered. The ten years have seen much variation in the configuration of the experiences, much variation in the students who engaged, and much variation in the world stage. This adds to the rigor of what is being shared.

This work is situated at the intersection of several streams of scholarship including work related to reading and reviewing as academics, work related to doctoral pedagogy in terms of disciplinary goals, and work related to doctoral trajectories. There are connections to published work on journal clubs where students practice reading together (e.g., Newswander and Borrego, 2009), published work on the strategies involved in literature review and what it looks like to read and synthesize what is being read, and published work on a signature pedagogy in doctoral education, the seminar, as a place where a collection of students read the same paper for a larger pedagogical end (e.g., Gray et al., 2012). From this body of literature, we see an opening for learning experiences that leverage doctoral students reading what they choose while also having such doctoral experience contribute to significant outcomes in doctoral education.

There are also connections to doctoral education curricula broadly (e.g., Lee and Danby, 2012). For example, what is the role of formal learning experiences where students learn to read methods and theories that are not ones they will pursue? What is the role of learning experiences that prepare students to engage with scholars unlike themselve? More broadly, where do students build community? Where do they build the relationships that sustain them in the long term? Where do they start to belong? Also, where do they create the intellectual infrastructure that they carry with them through their doctoral experience? The work in this paper is motivated by such

questions, and by laying the groundwork for studying whether the kinds of experiences described here can lead to the kind of vision just described in this paragraph.

This paper is a work in progress, and is potentially best understood as setting the stage for future work. Future work includes in-depth examination of the kinds of experiences that students have been having in the situations that start with everyone reading what they choose. Future work also includes an effort to create a toolkit of the components that have, over time, made up "starting with everyone reading what they choose." The results described in this paper create a foundation for organizing such a toolkit.

The contribution of this work in progress is to illuminate the central ideas underlying the experiences over the past ten years. Foregrounding the design orientation of the work, the investigation asks: What is suggested about the design space of learning experiences based on a constant comparative analysis of ten instances of this learning experience? In the language that will be used in the results, this investigation asks: What key dimensions of the learning experiences are revealed by systematically analyzing ten instances of that experience? This work in progress reports on the effort to address these questions by naming the seven dimensions of variation that have been identified and then unpacking three of these dimensions.

Methods

The form of research is a merging of research through design (Gaver, 2012) and grounded theory (Charmaz, 2006). The process entails identifying instances of an educational design problem being solved, aggregating information about those instances, and then using a constant comparison logic (with particular attention to changes from one moment in time to the next) to surface dimensions through which all of the instances can be characterized. The results of the analysis are the dimensions that can be used to describe the instances along with identification of the variations among the instances.

In this case, we are analyzing ten instances of a learning experience that starts with doctoral students choosing the papers to read. These instances were all taught by a single educator working solo in an academic system with ten-week terms. The number of students in each instance of the pedagogy is based on the size of the entering doctoral cohort in the department in which the class is taught and has ranged from 4 to 16. All instances of the learning experience took place in the same department of one university (the Human Centered Design & Engineering department at the University of Washington, the home department of the first author). The instances were sequential (occuring in different academic years); each instance had a chance to build on what was learned from previous instances. The work in this paper has never been the subject of scholarship or had research funds so there has been no formal evaluation of the learning experiences. A possible goal of this work is to create a path toward such scholarship.

This work leverages two kinds of archival data. The first data source is the set of syllabi and assignments used in each instance of the learning experience. Because of an extraordinary amount of stability, these materials are available through the learning management system and university provided file storage systems. These data show the choices that were made and how these choices were presented to the learners. The second data source is the collection of personal traces created by the educator before, during and after each instance. This data source is a basis for retrieving the rationale for specific choices and particularly rationale for changes.

To address the research question about dimensions of variation (and the design space), we followed a two phase approach inspired by DiSessa and Cobb's reference to "locus of refinement" as a way of working toward theory building in research on educational innovation (DiSessa and Cobb, 2004). In our case, we saw how tracing loci of refinement represented one means of identifying important dimensions of the learning experiences being studied. Once a dimension would be identified, then it could be further interrogated to see the kinds of wisdom that over-time refinements offer. This concept of locus of refinement was thus our point of departure. Because we were not yet convinced that every variation could be claimed as refinements, we chose to focus on variation and dimensions of variation while still inspired by the broader notion of locus of refinement. We proceeded in two phases.

In the first phase, we surfaced dimensions of variation by systematically exploring how the learning experience both stayed the same and changed from one offering to the next. This was done by first noticing similarities and differences with an expansive orientation (similar to open coding in grounded theory), and then organizing this expansive set of ideas into a first-level set of dimensions. This first phase was conducted by the first author who systematically worked through the ten instances. The result was a set of seven dimensions that can be used to characterize each of the ten instances: (1) choosing readings, (2) engagement with readings, (3) technical infrastructure, (4) together time, (5) transfer opportunities, (6) reflection opportunities, and (7) grading. These seven dimensions were then shared with the second author for skeptical peer review.

In the second phase, three dimensions (hereafter called first-level dimensions) were chosen for additional analysis: (1) choosing readings, (2) engagement with readings, and (6) reflection opportunities. The data was then explored in order to interrogate each of the ten instances in relation to these three dimensions. This process was iterative. First, notes were assembled describing each instance for each first-level dimension. Then, these notes were compared using the same constant comparison logic as before to identify second-level dimensions of variation. Finally, a narratively smoothed description was constructed for each first-level dimension.

The researchers in this process (the co-authors of this paper) have different relationships to the work. The first author is the educator who designed and led each of these learning experiences. This first-hand experience is an asset because of the accessibility to materials and rationale. This is also challenging in terms of creating distance between personal understandings and what is

shared. This is where the second author has come in--as a scholarly partner tasked with asking critical questions and serving as a skeptical peer reviewer. Because of the dual roles of the first author, it was additionally important to be clear in terms of approach and to leave methodological traces. The systematic approach to this work was part of our effort to create traces that are inspectable.

To think about trustworthiness, it is valuable to identify the kind of knowledge being produced and then address features of the approach that contribute to the trustworthiness of that kind of knowledge. The research question "What is suggested about the design space of learning experiences based on a constant comparative analysis of ten instances of this learning experience" foregrounds the desired knowledge--an understanding of the design space. The analysis is identifying dimensions of variation (both first-level and second-level) as a way to characterize the design space, and thus the dimensions of variation are the knowledge being produced. So the trustworthiness question has to do with the trustworthiness of the dimensions that are identified.

From work on the trustworthiness of qualitative research, we borrow the concept of confirmability as "researchers must take steps to demonstrate that findings emerge from the data and not their own predispositions" (Shenton, 2004). To address this criterion, we have been attending to articulating our process, staying close to the data, and including skeptical peer review. Because the process being followed shares much in common with grounded theory, and qualitative research, more generally, the trustworthiness considerations are similar. The results are more trustworthy to the extent they are clearly grounded in the data. The results are more trustworthy to the extent that the chain of reasoning that led to the results can be followed. In addition, the results of the approach are more trustworthy when the researchers have addressed their positionality and have been reflexive in the work. This is why we have included the earlier paragraph about the researchers. The goal of the knowledge shared in this paper is to empower identification of practice opportunities and research questions. The knowledge needs to be sufficient for that task.

Results

The analysis resulted in detailed descriptions of the following first-level dimensions of variation: choosing readings, engagement with readings, and reflection opportunities. In the text below, relevant second-level dimensions of variation are shown in italics.

Dimension: Choosing readings

Over the ten years of this learning experience in which the students have chosen readings, within the activity of choosing readings there has been variation in the *number of readings* students have been asked to choose and *the nature of constraints put on the choices*.

In the first three "you choose" requests, students were invited to choose a single journal paper and there were no constraints on which journal or what year. The students then collaborated to distribute the reading of these papers over the ten week term. All students subsequently read all chosen papers.

Instance four featured a dramatic change; that year students were asked to choose best papers from the most recent year in two high profile conferences important to the students' academic department (the conferences were CHI and CSCW). Like the previous years, students were asked to identify a single paper, but unlike the previous years, the only person that engaged with the paper was the student themself. Also, unlike the previous years, the student engaged with the paper for the duration of the term. This pair of constraints (source, publication date) was intended as liberating constraints (Davis and Sumara, 2014); the addition of the constraints were to make the job of choosing papers easier, to create a context for talking about conferences and how conferences structure knowledge production, and to create opportunities to invite people to class who had been involved in running the two conferences.

Interestingly, subsequent instances of the course featured a slow march away from this original pair of constraints. First, in order to address boredom and to increase autonomy, students were encouraged to choose more than one paper and to switch between their choices over time. Then, more conferences were added to the list in order to acknowledge that the department is heterogenous and not everyone attends the two conferences. A reduced emphasis on best papers was part of the move to include more conferences since not all conferences offer best papers. Even more recently, students have requested the option to include papers that are not from the most recent year. These changes have been done in order to support student motivation and honor differences, but at the result of making certain conversations more difficult as will be illustrated in the next discussion on how the readings have been leveraged. In other words, there are tradeoffs between these choices.

<u>Dimension: Leveraging readings</u>

Over the ten years of this learning experience in which the students have chosen readings, the role of the student-selected readings has changed. A starting point is to see the changes as three waves characterized in terms of *emphasis* (one measure is the number of class sessions of the total class sessions featuring the student-selected readings) and *location* (where the student-selected readings appeared).

- Wave 1-Exploratory configurations: The first instances of the learning experience involved the student-selected readings in a portion of the class activities. In the first two instances, the student selected readings were leveraged in the second half of the class, as opportunities to apply concepts engaged with during the first half of the class. In instance 3, the student selected readings were used in the first half of the class, as a resource to immediately contextualize the conceptual readings (about epistemology, trustworthiness,

ethics, etc.). The other activities in that third instance were modeled on a class that had been well-received by students but had not been optimized to support doctoral students.

- Wave 2-Pivot. The fourth instance marked a new direction; a direction in which the student selected readings played a role in 100% of the learning experience. Responding to comments that the engagement with the student-selected readings in instance 3 had promise but was too fast; in instance 4, engagements with the student-selected readings were distributed over the entire 10-week term. In addition, instance 4 featured 12 analysis questions (each coupled with conceptual readings) that were applied to the student-selected readings.
- Wave 3-Targeted investigations: Responding again to concerns about pacing and also a challenge of depth with twelve one-day analyses, instance 5 emerged as featuring the notion of a targeted investigation (an organizational unit featuring an analysis question oriented toward a range of perspectives and tasks distributed across multiple days and oriented toward shedding light on the question). The number, duration and focus of these investigations is discussed next.

Beginning with the pivot, the *nature of the engagement with the readings* has been to analyze them from different perspectives, with related conceptual readings as reference and inspiration. These analyses have changed in their *number* and *focus*. In instance 4 (the pivot year), students conducted twelve one day analyses with the following focus areas: research questions, summarization, argumentation, role of theory, ethics, contributions and interest, implications for action, bibliography, ways of knowing, epistemological commitments, quantitative/positivist perspectives, and qualitative/interpretivist perspectives. In the next three instances, the analyses were chunked into a smaller number of longer units (i.e., seven multi-day targeted investigations). The foci of these targeted investigations started and continued with the following set of seven from instances 5 through 8: citations, argument, implications, theory, knowing, ethics, and trustworthiness. In the most recent three instances, the latter investigations stayed the same (knowing, ethics, and trustworthiness) while the initial focus changed, moving from defamiliarization and structure abstracts to simply understanding.

Another dimension of variation has been *the choice toward, and the salience of the choice toward, a schema for organizing or narrating how the engagements with the readings fit together* as a larger class-long whole. This choice was particularly salient in the contrast between instance two and instance ten. In instance two, students looked at each reading from four conceptual perspectives: research as knowledge producing, research as imperfect, research as socially constructed and research as instrumental. This focus on four conceptual perspectives was explicit and replaced the idea (in instance 1) of having students create and then apply their own organizing logic. Fast forwarding to instance 10--in that instance, there were four targeted investigations that were explicitly organized via a four-part heuristic (UBaSE, understanding, believing, significance, and ethics) focused on critically judging research. In the instances between instance 3 and instance 8, the UBaSE heuristic was talked about and was leveraged in

increasingly visible ways (as the number of investigations went from 12 to 7 to 6 before arriving at the point where the number of investigations was the same as the number of components in the heuristic).

A deep dive into the analyses/investigations related to epistemology and knowing can help to ground what is being talked about and introduce a final set of ideas. Instance 4 (the pivot) was the first time the class engaged with a conceptual reading from the 1990's focused on epistemology (i.e., Orlikowski and Baroudi, 1991). Specifically, the authors had analyzed their body of disciplinary empirical research to see the relative roles of positivist, interpretivist, and critical epistemological in the research of the disciplinary community at that point. Following from their work, in instance 4, students were invited to ask the same question of their reading and were given a chance to capture the potential for mixed methods by using percent weights for their paper (what percent positivist, what percent interpretivist, and what percent critical). Students recorded their own thinking in a log they were using to manage the entire collection of analyses for their paper. In class, students talked with each other through their decisions and collectively raised questions.

In the following year, the students were invited to characterize their paper not with percentages but rather by placing it in a triangle with the three epistemological positions at the points. In addition, some class time was used for other students to also characterize the papers chosen by their peers and then compare the results (an approach inspired by the qualitative coding technique of double coding). A final part of the investigation was for the students to bring in multiple additional readings into the investigation and to place the added reading on a class-wide "epistemological triangle" that provided a window into the epistemological choices being made in the community. The investigation ended by exploring the limits of the triangle representation as well as the focus on only three epistemological positions.

The subsequent instances featured more scaffolding of the work such as by having the class explicitly create a code book, having them try different ways summarize the work of the investigation, having them write a letter to their future selves about the potential significance of the exercise, and introducing the exercise via epistemological wordplay (asking students to create and the explain the possible meaning of phrases created by completing __ epistemology, epistemological __, and epistemologically __). While most of the changes over time were clearly oriented toward refinement of the effort, some changes were about optimizing for the current situation. For example, during instance 8 and 9 (the pandemic years), a digital collaboration tool (Miro) was used for part of the work. Then, when in instance 10 we were back in the classroom, we chose to do part of the work of creating the aggregate epistemological space on a white board in the classroom. This had different affordances in the moment but was harder to archive.

This deep dive into the ways the epistemology has been a focus of the engagement with the readings has also showcased other dimensions of variation that have come into the work over time. For example, there has been variation in the significance of the individual work—a

movement from applying concepts to papers to discovering larger community trends (which is the rationale for choosing the term investigation). This has co-occurred with a notion of students' submitted work being something to talk about (boundary objects) being supplanted with a notion of the submitted work as part of a growing collective representation. Over time, there has also been an increasing leveraging of visualization techniques (such as the notion of an epistemological space represented by a triangle), creativity opportunities (which appears when students co-construct an ethics 'zine), serious play (as exemplified by the epistemological word play opportunity) and asset-based perspectives (such as when the students work together to construct a grounded theory of how they already make trustworthiness judgements rather than starting with the conceptual readings that tell them how to do it). Given the varied nature of the experience, reflection has always been an important feature of the experience so that students have opportunities to notice, name, and construct the learning that can be afforded by the experience. The work on reflection is discussed next.

Dimension: Reflecting

All instances of this learning experience featured explicit and non-negligible attention to student reflection. The assigned reflection featured dramatic variation in the early years of the course, as the course itself was going through dramatic changes. The overall approach to reflection stabilized starting with instance 5, and the high-level stability created a context for experimentation within the overarching stability. The most recent instance suggests a new round of innovation may be on the horizon.

At a high level, the reflection schemes can be characterized in terms of the following dimensions: *overall scheduling logic of activities* (event based, temporal, other), *the scale of reflection activities*, and *the total emphasis on reflection*. Within a particular scheme, there were additional variations related to the *nature and location of support*, the *role of a social component* and *the role of a culminating reflection* (preparedness, closure). These dimensions all relate to the formal ways that reflection is embedded in the class. These formal ways live alongside additional supports such as the construction of other class activities as either literally asking for reflection or as provoking reflection (such as through surprise or disorienting dilemmas).

Dramatic variation—the first four offerings. It has already been discussed how the first four instances of the learning experience involved dramatic changes and thus it is perhaps not a surprise that the formal support for reflection also featured dramatic changes. Instance 1 featured a temporal scheme for reflection, with reflection opportunities at multiple scales. In the second instance, the reflection logic shifts to event-based, and the footprint of the assigned reflection is significantly reduced. The daily and weekly forms of reflection drop off, and two instances of event-based reflection (in the form of end of project reflection) show up as the primary form. In the third instance, the event-based (post-project) reflection is replaced by a temporal weekly logic. This logic makes it easier for students to reflect on any thread of the class. Finally, in the "pivot" instance (instance 4), perhaps based on a sense that weekly reflection was too

burdensome and perhaps to honor the complexity of the class structure being explored, a temporal, twice-only logic was chosen. As with the previous term, the reflection opportunities were chances to focus on anything that had happened to that point. In addition, instance 4 included an opportunity for students to formally analyze the collection of reflections in order to identify class-wide themes in the learning.

Stability with embedded experimentation—the next five offerings. During the fifth offering of the class, a temporal—weekly logic was chosen. This overarching temporal logic was maintained for five instances, but with innovation or at least experimentation inside. One form of experimentation had to do with different ways of providing support. For example, the class has featured asking about bad reflection in order to create a conversation about desired reflection (instance 9), talking about challenges associated with reflecting in order to create a foundation for how to organize supports (instance 8), a customized set of prompts each week (instance 8), inviting students to define their own reflective practice (instance 8), and offering a set of resources to support reflection (instance 5). A second form of experimentation has been around how to leverage community in the work of reflecting. This was present in the early period, through boundary objects in instance 1(modest graphical artifacts created by students to help other students reflect), a requirement in instance 2 that students analyze and report back to the class on themes in daily reflection surveys, and the collective thematic analysis of the reflection essays in instance 4. The issue in the stability phase was how to have the weekly reflection be community-oriented. In instances 8, 9, and 10, the orientation toward community has taken the form of having students submit their reflections in a communal document. A third form of experimentation has been around the nature and role of a final reflection. In the first instance, the final reflection had been framed as a chance for students to make an argument about how the learning experience has prepared them for their future, and then the three subsequent instances did not involve a final reflection. During this stability period, a new kind of final reflection emerged. In instances 7, 8, and 9, the students worked collectively to create a shared final reflection in the form of an artifact capturing what had been done and what had been learned over the term.

Innovation on the horizon. Analysis of the reflection in instance 10 suggests that after the period of stability, it is possible that changes are emerging. For example, the overall logic was switched to temporal bi-weekly due to a perceived challenge of sustaining support and feedback and wanting to create an opportunity for more substantial writing. Also, the students not only had a chance to read other submissions at any time, but time to identify themes in the reflections was built into the class (similar to instance 4). Finally, for the first time, the final reflection was framed as part of the negotiation of the final grade. Because the main reflection assignments are now farther apart, this creates the potential for the reintroduction of some of the techniques associated with the earlier instances.

Discussion

In this work-in-progress, we have offered a description of ten instances of a learning experience that has, at its core, the idea of having students choose the readings. Because there are clearly many ways to configure a learning experience that starts with students choosing the readings, we have drawn on the notion of "design space" to understand our ten instances as ten points in design space anchored by the idea of students choosing readings, and then focused on seeing how the variation in the instances could be explained as variations along particular dimensions. In the first phase of the analysis, we identified seven first-level dimensions of variation. We analyzed each of our ten instances in relation to three of these dimensions (choosing readings, engaging with readings, and reflecting) in order to identify second-level dimensions of variation. Consistent with a work-in-progress, we see our work as creating a foundation for many kinds of activity going forward.

In a straightforward way, we see what we have presented in this paper as a foundation for a more comprehensive account of this over-time learning experience. Because we had limited success in finding other work that has engaged in this kind of tracing through a design effort over time, to do the work presented in this paper, we have had to create a process for doing the work as well as do the work. Now that we have created this process, we can finish our effort to describe, specifically by mapping the other four dimensions of the learning experience: the technical infrastructure and how it contributed to/enabled the learning experience, the ways that "together time" has complemented the work outside of class, the role of transfer tasks to help make learning visible, and the role of grading and how choices there have helped to keep the focus on learning.

We have framed this work as an exploration of a design space, and consistent with that framing, we see this work as creating a foundation for design efforts going forward. The seven first-level dimensions, and the various second-level dimensions related to choosing readings, engaging with readings, and supporting reflection, provide a framework for thinking about decisions for yet-to-be-offered learning experiences. A designer-educator can organize their design work through this framework, choosing among the choices captured in this work or choosing yet other options that are potentially easier to imagine because of the structure offered here.

We believe the work to describe the design space can also be useful for research efforts. Unquestionably, a role of future research would be to gather information about the kinds of learning outcomes that are accruing to learners who participate. Such insight has been available INSIDE of each learning experience through the focus on reflecting, but has not been formally studied or published. In addition, future research could investigate the mechanisms by which the learning happens. Research efforts to investigate learning mechanisms and learning outcomes can benefit from the current work in two ways. First, the framework (the set of first-level and second-level dimensions) provides a way to describe a specific instance of the learning experience so that when information about learning outcomes or learning mechanisms is gathered, that information can be coupled with a principled description of the associated learning

experience. Second, the framework also provides a foundation for making predictions that could be the subject of targeted research. For example, being specific about the kinds of papers students are guided to read (any journal article vs. a best paper from the most recent year of a specific conference) creates a foundation for predicting what students have the opportunity to learn. Future research could involve modeling that brings together the description of a specific learning experience, deductively or inductively identified learning mechanisms that are activated by specific choices in the learning experience, and then learning outcomes stemming from the mechanisms. This modeling effort could leverage the conjecture mapping approach offered by Sandoval (2014).

On a practical level, the work presented in this paper is central to an effort to share out the kinds of activities that have been used in the learning experiences that have been described. The framework created by the first-level dimensions will be used to organize the information to be shared (e.g., instructions that were used to guide students in choosing readings, the instructions involved in myriad analyses and targeted investigations, the resources and instructions used to support reflection). Further, we anticipate that the descriptive text included in this paper, and the second-level dimensions that are being explained in the descriptive text, create a foundation for the kinds of explanations that will be presented in the toolkit. If such a toolkit makes it possible for others to design learning experiences appropriate to their own contexts, then that would create a foundation for more research.

Finally, we are curious what we will notice when we are able to return to a deeper analysis of the kinds of learning experiences being created in doctoral education and the kinds of research being done on those learning experiences. We are hoping that by being able to be precise about the learning experiences described here, we will be in a better position to notice and ask questions and generally wonder about what is happening in doctoral education more broadly.

Conclusion

This work in progress is situated in the broad question of efforts to support early career scholars as they prepare to engage in research. The point of departure for this work is an initial class offering over ten years ago in which students were invited to choose the readings. The contribution of the paper is the identification of a seven dimensional framework for describing ten learning experiences that have resulted from the initial starting point of “letting them choose” and the subsequent descriptions of the learning experience along these dimensions. This framework represents a foundation for planned additional work including a modeling effort (how choices along the dimensions activate mechanisms that lead to intended or emergent outcomes), an interpretive effort (to situate this experience of educational change alongside current discourse about educational change), and a toolkit effort (to use the framework presented here as a foundation for organizing and sharing the range of materials that have been used over time with others who may be interested in trying something like this).

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