Creating Value for Teachers: Product Development at the Intersection of Education and Technology

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Accessibility
Creating Value for Teachers:
Product Development at the Intersection of Education and Technology

Doctor of Education Leadership (Ed.L.D.)
Capstone

Submitted by
Brian Rainville

To the Harvard Graduate School of Education
in partial fulfillment of the requirements for the degree of
Doctor of Education Leadership

April 2015
Dedication

To my wife, I love you.

Elisabeth Lim

To my parents, I love you.

Mark D. Rainville, Gay Parks Rainville, Stacy Rawlings, Larry Rawlings

To my sisters and brother, I love you.

Heidi Rainville, Chris Rawlings, Anna Rawlings
Acknowledgements

To my team, thank you.
Dorian Burton, Peter Fishman, Raychael Jensen, Zoe Stemm-Calderon

To Cohort 3, thank you.

To my mentors, thank you.
Dr. Andres Alonso, Dr. Liz City, Dr. Dean Williams

To my committee, thank you.
Dr. Marty West, Greg Gunn, Xan Tanner

To all my students in Baltimore, thank you.
Iyanla Taylor, Cesar Munoz, Cameron Wright, Matthew Cunningham
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Abstract

Between 2011 and 2014, investment funding for education technology companies increased by an average of 40% per year (Catalano, 2015). With an expanding footprint and funding stream, education technology companies have access to more students, teachers, and resources than ever before. As a result, they have an unprecedented opportunity to impact education in the United States.

In my Ed.L.D. residency, I served as Educator Engagement Director at Panorama Education, a mission-driven for-profit startup. Panorama helps schools collect and analyze feedback from students, staff, and family members and currently serves over 6,000 schools and reaches over 1.5 million students annually. As a vendor serving school systems, the vast majority of Panorama’s users are teachers. In most cases, purchasing lies in the hands of administrators; teachers do not have agency in the buying process within their school systems. Thus, Panorama cannot necessarily rely on market success to validate the value created for teachers.

As Educator Engagement Director, I led a strategic effort to use product development as a channel to create value for teachers while increasing appeal to system administrators. The crux of my work was the development of a new professional development product for teachers, called Playbook. The product, which I first proposed early in my residency, is now in pilot testing with several districts, including a large urban district in the Southwest.

In this capstone, I present how I led and worked with a team of software developers, designers, and marketers to combine startup, lean, and non-profit business methodologies to develop a product that created value for teachers. The project’s initial
success, as demonstrated through teacher feedback and a successful pilot test, suggests the value of distinguishing between purchasers and users and pursuing user-defined value in education technology companies with a dual bottom line of generating profits and improving American education.

Introduction

In April 2012, three undergraduate students at Yale University founded Panorama Education (Panorama) in an effort to make the voices of students heard in K-12 schools. Beginning with a single public school district, Panorama used student perception surveys, analytics, and reporting to help clients better understand the experiences and opinions of their students. That year, the three founders were selected to spend the summer further developing the business at the Yale Entrepreneurial Institute. In May of 2013, Aaron Feuer and Xan Tanner, two of the original three founders, graduated and spent the summer shepherding their young company through a second incubator—Y Combinator—while working to grow their skill sets and Panorama’s footprint. At the end of the summer the team moved Panorama to the Cambridge Innovation Center (CIC) in Cambridge, Massachusetts and soon after raised $4 million dollars in seed investment capital. In May 2014, a month before my residency began, Panorama finally acquired their own office space and the number of staff reached the double digits.

In the first 30 months of operations, despite the company’s admittedly thin sales and outreach efforts, Panorama’s client base grew rapidly. In the early summer of 2014, less than three years after signing the first client, Panorama was serving over 100 clients and surveying over 1.5 million students in over 5,000 schools annually. No longer solely focused on customized perception surveys for students, Panorama was building a set of
research-backed survey tools to help clients better understand families, staff and faculty in addition to students.

Like many organizations that experience success early and quickly, Panorama focused resources on keeping up with customer demand. With the seed investment, however, the company gained the opportunity to grow more deliberately and strategically.

Between May 2014 and the writing of this capstone, Panorama has simultaneously increased capacity by hiring more engineering, outreach and client services staff while strategically adding other staff to create new research, marketing, design and educator engagement practices. The roles of researcher, marketer and designer have clear and well-defined functions in the company. Educator engagement, however, is more nebulous. The foundation of the educator engagement function is rooted in Panorama’s commitment to create and deliver products and services that empower teachers and principals to better serve students. The mechanisms by which this outcome is pursued and realized are unclear. For my residency I assumed the role of Educator Engagement Director. The need for the work of educator engagement reflects the gap that lies between our buyers and the majority of our users.

The majority of the buyers of our products and services work in administrative positions in state, district, charter management, or non-profit offices. Simultaneously, the majority of the users of our products and services are teachers and principals with no direct input on the purchasing decisions of the buyers in their organization. This arrangement creates a dyadic relationship where the value experienced by one group does not inherently transfer to the other (Hult et al., 2000). Thus, the market-proven success of
Panorama indicates that we create value for our buyers; however, it does not allow us to conclude that we are producing value for the users who do not have agency in the purchasing process. In order to be sure that Panorama creates value for this group of teachers and principals by empowering them to improve their practices, the organization needs a function such as educator engagement that facilitates this work. Panorama cannot rely on the market itself as a barometer of the full range of value organization hopes to create.

As educator engagement aspires to complement the flow of productive feedback born by market response, it would be perilous to decouple the two entirely. As a for-profit enterprise, if Panorama is to have any impact at all, it must first be in business. To be in business Panorama needs revenue that, at the minimum, covers costs. Further, if Panorama is to make the greatest impact it can, than the organization needs to grow to optimize its craft and to serve more educators more effectively. Though Panorama has the luxury to grow strategically and is doing so with a developing intentionality for improving education, its capacity to grow—and thereby be impactful—is mediated by profitability. Given this context, the ideal contributions that educator engagement can make to improve Panorama’s capacity to support the improved practice of teachers and principals will be those that simultaneously improve the value of offerings for buyers (market-proven value) and users (impact-proven value.) In short, to optimize the good that Panorama does, the organization will need to optimize how well it does.

In the role of Educator Engagement Director I was tasked with creating and executing projects that allow Panorama to explore the educator engagement function as a channel for the organization to deliver greater value to teachers and principals.
Simultaneously I helped the organization begin to explore the extent to which producing value for non-decision-making stakeholders might manifest with decision-making stakeholders. The following chart outlines three of the projects I led and the associated key activities, desired outcomes, and metrics for each.

<table>
<thead>
<tr>
<th>Project</th>
<th>Key Activities</th>
<th>Desired Outcomes</th>
<th>Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources</td>
<td>Identify aligned resources, tune resource &quot;bite-size&quot; collaborate with engineering staff to embed resources</td>
<td>- A bank of topic-associated resources is available to be included or embedded with reports</td>
<td>- Resource bank for 1 or more constructs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Our offerings move towards the “after-analytics”</td>
<td>- If planning and building phases go well, a product in the shipping phase.</td>
</tr>
<tr>
<td>Client projects</td>
<td>Lead multiple client projects from beginning to end, explore unique usage cases with clients who are using Panorama in new or less frequent ways</td>
<td>- To keep educator engagement strongly tied to practice</td>
<td>- Successful progress/completion of identified projects</td>
</tr>
<tr>
<td>Thought partnership</td>
<td>Pursue conference opportunities, create blog posts, partner in webinar/instructional video creation</td>
<td>- For Panorama to engages educators in a variety of ways that leads to increased dialogue and mutual awareness</td>
<td>- The “publication” of multiple pieces of content during residency</td>
</tr>
<tr>
<td>Content Marketing</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Review of Knowledge for Action**

**Residency Context**

My residency site is unique among residency sites in several important ways. Panorama is the first for-profit partner to host an Ed.L.D. student for residency. As a for-profit company working in education, Panorama finds itself in the position of having to
declare itself a mission-based for-profit to signal to a leery education sector that the company is committed to creating more than financial profits alone. The need for this declaration is based upon a widely held disposition that for-profits working in education prioritize financial success over student success. This perception is consistently reinforced by a vocal set of stakeholders. NYU Professor and Education Historian Diane Ravitch comments on for-profit vendors that, "They're taking education, which ought to be in a different sphere where we're constantly concerned about raising quality, and they're applying a business metric: How do we cut costs?" (Simon, 2012).

In Panorama’s case, the reality is that a small group of undergraduate students created the organization to help strengthen schools and formed the company as a for-profit to facilitate the greatest production of social value possible. The founders believed that for-profits were positioned to make the greatest impact for multiple reasons. First, the structure empowered the clients as the arbiters of value. If Panorama was unable to create value for a system of schools within the parameter of the local budget, the organization would not continue to exist. Next, if the organization chose to pursue funding, it would be unencumbered and free of reporting requirements that nonprofits face when pursuing funding. The demands associated with the funding available to for-profits also force the continued pursuit of self-sustaining value creation. In contrast, nonprofits that are not dependent on fee-for-service funding can be perpetually supported by funding that comes from sources outside of the value they directly generate; they are not forced to pursue self-sufficiency.

At 13 employees when I started, Panorama is also the smallest partner site to host a resident. While one might expect the employees at such a small organization to have a
strong understanding of the work of their colleagues, this was not the case at Panorama. In one of my interviews I asked a future colleague what support felt like at Panorama and she explained that she found every one of her coworkers to be very supportive but that “each of us is running as fast we can in our own direction. It is impossible for anyone here to be able to know exactly what you are working on.” The size of the organization impacts the ways in which leadership manifests. Unlike larger organizations where leaders sit above layer upon layer of hierarchy, every employee at Panorama is actively doing work that is operational in the sense that it touches an external stakeholder and is vital to the day-to-day work of the organization. In this way, leadership at Panorama can only happen from within the ranks.

The words strategy and tactic originate in the Greek language. Strategy comes from the Greek word strategos, meaning military general. The role of the strategos was to watch the battle from a distance and direct the tactics, or in Greek, taktikos. This notion of strategy and leadership are assumed to hold true at residency sites. The program itself defines the resident’s task as, to “lead a strategic project within an Ed.L.D. partner organization” (P. 3, Part I: Ed.L.D. Residency and Capstone Overview, 2014). Given Panorama’s size, no leader within the organization works solely on strategy. Every employee, regardless of seniority, is immersed in tactical day-to-day operations. In order to lead a successful strategic project, my ability to execute operational tasks associated with project management like planning, monitoring and production was just as important as my ability to understand and create successful strategies.
Research Questions

In this Review of Knowledge for Action I focus primarily on innovation and product development and, to the extent that it is relevant to these topics, organizational culture. Weaving culture into the conversation is important for two reasons. First, the culture of Panorama is still developing as the organization charts its course. Second, leading educators to engage with new and different tools in their practices may well require a cultural change or the development of new cultural aspects within Panorama.

I draw much of what follows from the field of business research. The business literature can offer a robust review of product development, innovation and culture in organizational settings similar to Panorama. My research questions are meant to drive me to establish fundamental and practical knowledge to facilitate my effectiveness in an industry and role in which I have little experience. While I was confident in my expertise and wisdom in the field of education, I was not confident that these qualities would bear fruit in my residency if they were not coupled with a new set of knowledge and skills namely, innovation management and product development. Questions one and two also aim to engage content I have learned through study and work experiences. Finally, when possible and across all three questions, I searched for answers to my questions that specifically focused on Lean practices (Ries, 2011).

Questions:

1) What are established best practices, strategies or frameworks for innovation and product development?

2) How does the culture of an organization and of a sector influence innovation and product development?
3) How does an organization produce value for the users of their products and services when those users have no influence on the purchasing process?

**Innovation and Product Development**

Product development and innovation are so closely linked that researching one invariably, if not immediately, leads to the other. Carlson and Wilmot (2006) defined innovation as

the successful creation and delivery of a new or improved product or service in the marketplace. Or to put it another way, innovation is the process that turns an idea into value for the customer and results in sustainable profit for the enterprise. (p. 3-4)

This definition, which links innovation to the creation of value for consumers, gains further validity juxtaposed with other frameworks for managing innovation or product development.

In one such framework, Schuh, Lenders and Hieber (2011) argue, “In R&D, the effective match of customer needs and product functionalities is one of the most important challenges.” The authors explain that this is the responsibility of the innovation managers who, to be successful, must facilitate the creation of products that are precisely engineered to target customer value. Over-engineering, or building too much into a product, can result in bloated costs, while under-engineering, or building too little into a product, will lead to product failure.

for a four-stage model that begins with procuring innovative ideas and culminates with testing concepts for proof of customer value. The most unique aspect of their model is the argument that keeping old ideas alive is critical for productive innovation. The tactic of keeping otherwise retired ideas active is an engaging and potentially impactful outlier. The work of Schuh et al.’s and Hargadon and Sutton are not only similar in that they align with Carlson and Wilmot’s definition of innovation, but both sets of authors also contend that that innovation and product development can and should be systematized.

Panorama has adopted a lean business methodology, a “system for developing a business or product in the most efficient way possible” (Kromer, n.d.). In lean methodology the goal is to develop business or products with the least possible investment by constantly identifying and testing assumptions inherent in processes and outcomes. This methodology is in contrast to the business models and product development operations in organizations like Apple and Tesla, where a product or process can be allocated massive investment before it is ever market-tested. Womack and Jones (2003) outline five general principles for lean business processes that they suggest form an iterative cycle. First, value is defined from the customer’s perspective. Second, the value stream is mapped comprehensively. Third, flow is created by reorganizing the value stream to eliminate unproductive steps and maximize value creation. Fourth, pull is created by responding to customers needs on a just-in-time basis. Finally, perfection is pursued via continuous improvement.

David J. Anderson adapted the principles of lean business for the specific purposes of technology or product development. In doing so, he created a work management structure called kanban (based upon the Japanese word for bulletin board)
that reflects his adaptation of the lean business principles to product development.

Anderson (2010) describes kanban as,

the evolutionary change method that utilizes kanban pull system, visualization, and other tools to catalyze the introduction of Lean ideas into technology development and IT operations. The process is evolutionary and incremental. Kanban enables you to achieve context-specific process optimization with minimal resistance to change.

Kanban has four foundational principles (The Principles & General Practices, 2010):

1) Start with what you do now.
2) Agree to pursue incremental, evolutionary change.
3) Respect the current process, roles, responsibilities and titles.
4) Encourage acts of leadership at all levels in your organization.

The cycle of five lean principles described by Womack and Jones form a foundation for the entire category of “lean” business and are referenced repeatedly throughout the literature. While more specific in focus, Anderson’s work still serves as a gateway to a body of research and literature.

Multiple studies have narrowed their focus to innovation and product development within a lean context. Given the constrained resources of startups, these studies are directly applicable to my residency. In an effort to capture a clearer view of how innovation and lean product development are being systemized, Welo et al. (2013) conducted a comprehensive review of lean product development models described in the literature. Welo et al. identified 13 key principles of product development models and
mapped them across 12 models. Of the 13, four of the key principles appeared in 50% or greater of the models surveyed.

**Welo et al.’s Analysis of Key Principles in Lean Product Development**

<table>
<thead>
<tr>
<th>Key Principle</th>
<th>Percentage of Reviewed Models Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer defined value</td>
<td>92%</td>
</tr>
<tr>
<td>Culture supporting excellence and improvement</td>
<td>67%</td>
</tr>
<tr>
<td>Organization for functional expertise and cross functional integration</td>
<td>50%</td>
</tr>
<tr>
<td>Development of a chief engineering system</td>
<td>50%</td>
</tr>
</tbody>
</table>

In a similar effort, Hoppmann, Rebentisch, Dombrowski and Zahn (2011) analyzed the literature to identify 11 lean product development components and mapped them across eight lean product development models. In the analysis, five components were found in 50% or greater of the models.

**Hoppmann et al.’s Analysis of Components in Lean Product Development**

<table>
<thead>
<tr>
<th>Lean Product Development Component</th>
<th>Percentage of Reviewed Models Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong Project Manager</td>
<td>88%</td>
</tr>
<tr>
<td>Responsibility-based Planning and Control</td>
<td>63%</td>
</tr>
<tr>
<td>Simultaneous Engineering</td>
<td>63%</td>
</tr>
<tr>
<td>Set-based Engineering</td>
<td>63%</td>
</tr>
<tr>
<td>Workload leveling</td>
<td>50%</td>
</tr>
</tbody>
</table>

Hoppmann et al. define a strong project manager as one “who leads the development of projects from concept definition to market and is ultimately responsible for delivering
value to the customer.” Responsibility-based planning and control is a distributive model where individual teammates are given benchmarks, but are free to structure their own work progressions. Similarly, simultaneous engineering is a cross-functional approach to engineering where hierarchical workflows are traded for collaboration. In set-based engineering, iterations for product refinement are frontloaded. Workload leveling refers to strategic resource allocation to avoid workload bottlenecks as the project progresses. Looking across the most frequently present components and principles from Hoppmann et al. and Welo et al.’s work, it is striking how many of them are directly related to the culture of the organization.

Further supporting the perspective of culture as pervasive and worthy of complex intervention, of Hoppmann et al.’s five most common components of lean product development, four of them directly impact culture via task design. Hargadon and Sutton (2000) concur and give equal weight to the corresponding shift in culture that, they argue, must accompany the shift in thinking if innovation is to thrive. Indeed it is widely held that culture is of critical importance if an organization hopes to establish successful innovation and product development structures.

**Innovation, Product Development and Culture**

In his note *What Is an Organization’s Culture?* (2006), innovation authority Clayton Christensen discusses antecedents of culture. Christensen posits that culture begins to form the moment individuals within an organization are faced with a task. As they tackle the task, they inevitably pick a path forward. With each successive task, that path forward become more worn and less deliberate, until the members of the group find themselves operating with a set of assumptions regarding the proper way to think, act and
behave. To consider the role of culture in innovation and product development within the startup context, one must first recognize that culture develops from simple task-related beginnings and rapidly coalesces into a complex and nebulous form. The Bridgespan Group publishes a tool to assess an organization’s culture that includes over 30 data points covering topics ranging from visible aesthetics to incentive systems.

Researchers disagree about the methods by which a productive culture is developed. In *Creating a Lean System of Innovations: The Case of Rockwell Collins* (2010), Jayakanth Srinivasan argues that deliberately crafting incentives is the most effective strategy for influencing an organization’s culture. Schuh et al. (2011) view culture as sophisticated and more mission-critical, “To implement Lean innovation successfully, a rethinking has to be achieved: a culture which identifies needs for change and is prepared for constant change is essential.” Welo et al., propose two separate models for lean product innovation, both of which are centered on the organization’s culture. In each model, culture is seen as the ultimate overlap, reaching far beyond incentives to impact nearly every aspect of the organization.

**Organizing to Learn vs. Organizing to Execute**

Scholar Amy Edmondson explains,

Most managers believe that relentless execution—the efficient, timely production and delivery of offerings—is vital to corporate performance. Execution-as-efficiency is important. But focusing *too* narrowly on it can prevent your company from adapting. Edmondson recommends widening your lens to include execution-as-learning. (p. 1)
The crux of her argument is the idea that sustained success comes from an organization’s ability to learn and adapt. Change is inevitable and a company that is not able to respond to change leaves its fate to chance.

Edmondson goes on to describe the differences in leader and employee behavior, work processes, feedback problem solving and the effect of fear between organizations that are organized with execution-as-efficiency vs. execution-as-learning. As an organization transitions from efficiency to learning, employee autonomy, process flexibility, knowledge sharing, reciprocity and psychological safety increase. Finally, the Edmondson outlines four steps for creating an organization that is organized to execute: 1) provide process guidelines, 2) provide tools that enable employees to collaborate in real time, 3) collect process data, and 4) institutionalize disciplined reflection.

In my work at Panorama, my ability to structure my strategic project around learning will undoubtedly be necessary if I am to find success. I will likely be leading work that it is new to the organization and requires the development of new capacities; in this context optimizing learning will mean optimizing execution.

Creating Value for All Users

Red Ochre and the United Kingdom government’s Business Link (2009) differentiate customers and beneficiaries as two unique and important stakeholder groups. Customers are the people or organisations purchasing your products or services. They may be buying those products or services for themselves or for someone else… beneficiaries are the consumers of your products or services – they are the people or organisations directly using your products or services and benefiting from them. (p. 1)
Differentiating the two groups is key for organizations that aspire to create value by delivering products and services to a group that does not have agency in the purchasing process. In the example of selling a school-level product to a school district, the paying customers would be the district administrators involved in the acquisition process. The beneficiaries would be the educators and students impacted by the school-level product. We cannot assume that a product or service that produces value for one group inherently produces value for the other. In many cases there is enough alignment between the two groups for value creation to benefit both. Still, this isn’t always the case. Reflecting on the quest of non-profits to create value, Ellie Buteau of The Center for Effective Philanthropy (2014) notes, “the single reality that makes philanthropic work so challenging and underlies countless dysfunctions is that the ultimate “customer”—the child in school, the forest that is damaged, etc.—by usually doesn’t pay for the programs and services delivered.” Still others disagree and argue that the problem lies not in the separation between customers and beneficiaries, but in an aversion to seeking feedback from the beneficiaries. Twersky et al. (2013) note,

…bypassing the beneficiary as a source of information and experience, we deprive ourselves of insights into how we might do better—insights that are uniquely grounded in the day-to-day experiences of the very people the programs are created for.

Across groups, there is agreement that recognizing, considering and deliberately navigating the customer/beneficiary gap is an important part of creating value for individuals who will use an organization’s product or services but aren’t included in the selection of those products or services.
Implications

The research in my Review of Knowledge for Action has several implications for my work. First, given the prominence of the product development role and the cross-functional nature of the project, the educator engagement role will engage nearly the entire organization in independent and group tasks. Given Christensen’s assertion that tasks and the subsequent manner in which they are addressed create culture, my teammates and I will inherently be engaged in setting and sustaining culture at Panorama. It may be a worthwhile exercise to reflect on the tasks inherent to the operations of my project as mini-culture engines for Panorama. When I asked about culture during my interview, a senior staff member responded, “We are so small that our culture changes every time we hire someone new.”

Second, the five general principles for lean thinking laid out by Womack and Jones will provide a strategic framework by which to shape the operational sides of my residency. I find the five principles valuable as a simple and clear set of critical questions by which I can refine my practices. Further, the five principles fill the void that often exists between strategy and tactics. The principles are not inherently tactics, but can be distilled into tactics and also rolled up into broader strategies. David Anderson’s work in adapting the principles of lean methodology to product development has the potential to be especially impactful if my residency arcs to product development.

Third, the components and key principles of lean product development derived from the collective work of Welo et al. and Hoppmann et al. have practical implications regarding how I structure my projects. For example, I am much more likely to take on a “strong” project manager position than I otherwise would have. In most settings I default
to distributive leadership that emphasizes collective decision-making and promotes divergent thinking. While strong project management doesn’t necessarily preclude these styles of leadership, the authors do make clear that it means individual accountability and, at times, decision making. In addition, this research suggests to me that I can increase my likelihood for success by creating processes that allow the customer to define the value and working to develop a culture of excellence and improvement.

Finally, this research suggests that navigating the customer-beneficiary gap that exists amongst our client and user base will be critical if I am to develop a project that delivers the kind of value that I aspire to create. To this end, I will implement Twersky et al.’s suggestions for engaging beneficiaries in feedback processes.

**Theory of Action**

In consideration of my role, my professional experience thus far, and the literature, I am able to construct a theory of action for my residency. In order to do so I will start by describing a broader theory of action that sits across the organization, though it goes largely unnamed.

If Panorama

- creates partnerships with educators and educator organizations,
- works to continually understand the value that our consumers AND beneficiaries anticipate and experience, and
- actively seeks and embeds educator feedback into our offerings over time;

then
• we will increase the demand for our offerings, noted by more clientele, more diverse clientele,
• we will increase the usage of our offerings,
• we will improve the impact of our offerings, and
• we will generate expanding revenue.

Given the organization’s theory of action, for my strategic project my individual theory of action is:

If I

• create a process for my strategic project where beneficiaries a) define the value we deliver and b) provide feedback that we use to adapt the output of the process, and
• I create a process that embodies the principles and components of lean product development while creating the conditions for executing as learning,

then my strategic project will help Panorama

• increase the usage of our offerings,
• generate more revenue, and
• help teachers better serve students.
Description of work

Entry

The process of selecting my residency site was driven by identifying an organization that embodied two core values that I felt I needed to make my greatest impact. First, I looked to join an organization that was committed to creating agency in others. Sustainable improvement in education is difficult to create. Some theorists argue that sustained progress can only come from empowering the community of individuals who must do the work (Kretzman and McKnight, 1993 and Freire 2000). During my career working to improve systems that influence education, I have found this perspective to be accurate. Further, I subscribe to Dean Williams’ philosophy that, “Real leadership empowers others to meet the challenges or access the opportunities in their own settings independently” (2013). My residency site needed to allow me to exercise my leadership by empowering others, including my colleagues within the organization, and those we serve outside of the organization.

Second, I aspired to join an organization that focused as much on the personal and professional values modeled by the behavior of its individuals as it did on the work and the outcomes it produced. Years of working in systems of education indicates to me that the way leaders behave towards those they manage quickly spirals through the organization. As this first layer of staff turn and orient to their own direct reports in a way that reflects what the initial leaders modeled, a strikingly quick homogenization occurs. Individuals across every layer of the organization adopt the behavioral patterns of the leader. In the context of organizations that serve students, my experience tells me that the way leaders treat their reports directly influences the way student-facing adults treat
students. In my residency I aimed to serve an organization with leaders that modeled the
treatment of students in the ways in which they treated colleagues. By this, I do not mean
coddling or hand-holding. Instead, I mean striking a respectful and honest tenor that at all
times aims to foster the development of the other person.

Through interviews and visits, I found that in Panorama’s 9th value, “Practice
Goodness”, goodness is defined as, "Goodness means recognizing that how we act is as
important as what we accomplish.” (See Appendix A for Panorama’s complete company
values.) Ultimately, I came to believe that Panorama met these requirements. The
organization became my official residency site on April 7, 2014. Shortly thereafter, I
began engaging with staff, including my supervisor (Xan Tanner), my mentor (Megan
Costello) and Harvard faculty who were partnering with Panorama or working in related
fields.

With a very public seed investment lead by Mark Zuckerberg’s Startup:
Education, the founders named to “Forbes 30 under 30” (Howard, 2014), and articles in
The New York Times (Goel, 2013) and other major publications, Panorama had built an
exceptional amount of buzz in the fall and winter before I signed on. In my conversations
with faculty it became clear to me that the public buzz was accompanied by an academic
buzz. Faculty were hopeful for the impact that perception surveys could make in
education, believed efforts to date had failed to deliver on that promise, and felt
optimistic that Panorama could produce meaningful value in the sector by improving all
aspects of the survey process.

As I visited my soon-to-be colleagues at their home in the Cambridge Innovation
Center and later at their first office in Boston, several facts became clear. First, a growing
customer and project base was stretching Panorama’s capacity thin and each of the 13 employees was doing an inordinate amount of work. Second, much of the work was done on a just-in-time basis. Problems were tackled as deadlines demanded. Even strategically important state-level RFPs were completed in the late hours of nights before proposal deadlines. Despite my efforts, the nature of the work flow in the organization made identifying a strategic project before the start my residency a virtual impossibility. Instead, I crafted a 3-month entry calendar that positioned me to focus my efforts on learning how work was accomplished in the organization by participating in a robust onboarding, shadowing my mentor and leading multiple smaller projects. Of these three structures for learning, the series of smaller projects that I managed proved to be the most productive.

Between the beginning of July and late September, I led several small projects to develop my understanding of Panorama and build legitimacy and support within the organization. These included client projects, conference proposals, onboarding sessions and internal tool development. As I progressed through my entry plan and the small projects, I refined my strategic project ideas several times with multiple colleagues in a series of six capstone sessions. Included in these sessions were members of every team at Panorama - engineering, outreach, marketing, client services and operations. Through the course of these workshops I not only gained meaningful feedback on the content of my work, but I also began to build relationships and gather legitimacy and support amongst my colleagues. Still, I struggled to identify a strategic project that I would be able to launch and lead. I came to believe, however, that I would need to sit with teachers and understand their perspectives to inform whatever path my project may take.
After repeated unsuccessful requests for access to teachers who partook in our survey processes as members of our client organizations, I decided to seek teacher input outside of Panorama’s client base. In early September I interviewed fifteen teachers for roughly twenty minutes each to better understand their perceptions and experiences with feedback. (See Appendix B for the interview script.) I found the teachers through Boston University’s School of Education, Teach for America, and a colleague’s professional network. While I could not be assured that the teachers I interviewed were an accurate representation of the teachers Panorama serves, the interview pool was diverse along lines of grade levels taught, subjects taught, student populations served, and years of experience. My goal was to build an evidence base that described what made feedback experiences productive for teachers and what made feedback experiences unproductive for teachers.

Conducting teacher interviews fits directly into the Learn step of Eric Ries’s Lean Startup methodology (Ries n.d.) (See figure 1) and provided a foundational set of knowledge from which I could refine and derive my ideas, and build legitimacy and support to move them forward. Because Panorama uses a system for decision-making similar to lean methodology, where data is sought to support all decisions and justify resource investment, this tactic was a strategic decision I made in an effort to gain traction for the project.
Ultimately, in 80\% of the interviews teachers mentioned that feedback and reports would be made more helpful if they included next steps: suggestions for how teachers might improve their practice based upon the feedback provided. In 60\% of the interviews, teachers stated that reports and feedback was most helpful when it was applicable to practice. When I combine “next steps” and “applicable to practice” into a single category, the topic is mentioned as a facet of helpful feedback and/or reports by 93\% of the teachers interviewed. (See Appendix C for the full interview results.) The interviews showed that teachers wanted the information they were being given in reports and feedback to be actionable. Beyond the data or analysis alone, the teacher wanted to know what they could do inside of their classroom to make progress. They wanted an answer to the question “What’s next?”
Another theme that came from the interviews was teachers’ preferences for input from sources familiar and informed about the work of teaching and the unique challenges that came with serving students similar to those they served. This theme, “familiarity”, manifested in 73% of interviews. For example, one teacher noted “So frequently [feedback] comes from administrators who are out of touch with the classroom” (A. 2014). Another talked about the frustration of report content that “doesn’t have to do with my population” (C. 2014). Still another teacher noted the fruitlessness of reports that are “not useful for my setting” (A. 2014). A final teacher noted that feedback and reports are most useful when they “pay heed to the fact that the practitioner knows what will work best and hands off the decision making” (L. 2014).

Although I did not set out directly to capture teachers’ opinions of their sense of spare capacity within the interviews, multiple teachers mentioned or alluded to feeling overwhelmed. One expressed a preference for content that was “bite-sized” (C. 2014). Still another described that reports “can be overwhelming... can be too much work” (A. 2014).

Coming away from the interviews, I felt that I was hearing a few themes clearly from the teachers I interviewed about what made reports and feedback as useful as possible for them. First, feedback was more productive if it was combined with concrete suggestions of practices that teachers could attempt in the classroom. Teachers did not want to be left alone to try to answer the question “What’s next?” after they received feedback. Second, teachers found feedback and reports to be more useful when the information was relevant. In this case, relevance meant understanding teaching and understanding the specific student populations with which they worked. Finally, the
teachers expressed the sense of a lack of time; feedback was most useful when it was quick and efficient.

While the number of interviews I conducted to establish a beneficiary-defined explanation of valuable feedback may be low compared to most academic research, in the context of Panorama’s application of lean methodology, working from a sample size of 15 to validate continued investment in a project was well within the parameters of established precedent. In a company-wide presentation given within a month of my start date by a co-founder and long-tenured engineer, the benchmark for a new product, Sherlock, to move forward in development was set as “talk to three clients, get enthusiastic responses from two.” (See Appendix E for relevant presentation slides.)

Having met the internal expectation for external validation, I still needed to be sure that I was not drawing inaccurate conclusions by moving to quickly. Given the diversity of the 15 teachers I interviewed, I felt that the consistency with which I heard the themes of next steps, applicable to practice, and familiarity across the interviews gave me the data I needed to be satisfied with the conclusions I drew.

**Strategic Project - Launch**

During an informal and unplanned conversation after a dinner in August, Aaron Feuer (CEO), Geoffrey Litt (engineering) and I stumbled upon the idea of hosting a Panorama Hackathon. The concept behind the Hackathon was to create a space for individual and small groups to think creatively about projects that would benefit Panorama and quickly build semi-functional models of their ideas. All three of us felt that there was a good deal of creative energy and opportunity in the company that was going untapped because of the just-in-time nature of our work flow and lack of spare capacity.
Hackathon would hold these issues at bay for a brief 24-hour period by “closing the company” and asking all employees to work on ideas outside of the norm. The culmination of Hackathon would be a series of presentations from each team to the entire organization.

The official email announcing Hackathon came from co-founder Xan Tanner and asked for “bold new ideas to help catapult Panorama forward” (X. Tanner, personal communication, September 1, 2014). After deliberating for a few days leading up to Hackathon, I formed a two-person team with Aaron to push forward an idea that I had been advocating for, but that had been had not gained traction in my residency thus far. I identified the project in a strategic project update memorandum sent to my committee as “Resources” (B. Rainville, personal communication, August 28, 2015). The core work of the project was to build a platform that helped teachers answer the question “What’s next?” and to do so in a way that empowered teachers at every step of the process.

The name of the project evolved from “Resources” to “Panoramaforteachers.com” during the course of Hackathon. Aaron and I used our time in Hackathon to match the design of the panoramaforteachers.com platform to the three takeaways from the interviews I conducted early in September.

First, we designed a platform that provided concrete suggestions for teaching practice that were aligned to the feedback teachers received in our reports. We deemed these suggestions as “moves” that a teacher could do. We chose the term move because it communicated the practical nature of the content. A move was meant to be something a teacher can understand and do, distinct from a potentially confusing or overly complex strategy or theory.
Second, we established relevance in the design of the content in multiple ways. All of the “moves” on the platform would be created and shared by other teachers. Teachers would actively rate the moves, validating their quality. Additionally, the platform would gather information in a teacher profile that included the grade level and content taught, and the years of experience of the teacher. As more teachers rated moves, the platform would keep track of which types of moves were most relevant to which teacher profiles. When teachers logged in, the platform would show them the moves that were most highly rated by teachers with profiles similar to theirs. Finally, the platform would calculate and show the unique level of relevance to each teacher for each move that they viewed on the platform by comparing the teacher’s profile to a similar move profile.

Finally, we deliberately planned for the platform to be fast and easy to use. Moves would be “bite-sized”. The platform would be directly accessible from within teacher reports. Content would be sorted based upon the same topics that Panorama’s survey questions and report data were sorted, providing teachers with a recognizable entry into the platform.

Aside from the features of the platform that were directly aligned to the feedback that I had gathered from teachers, the initial design also included some features which teachers had not directly described, but were still aligned to the greater spirit of the feedback that emerged from the interviews. First in this group of features was a category of content we deemed “research.” Research would curate and share free articles, chapters and studies from academia to empower interested teachers with expanded knowledge about the inner workings of teaching and learning. Additionally, we grouped all of the
content on the platform—research articles and moves—to the five topic areas from our primary survey tool, the Panorama Student Survey. (See Appendix D for a portion of the Panorama Student Survey User Guide.) This alignment made the connection between the resources on the platform and the data in teacher reports clear and strengthened the Panorama Student Survey as a product.

At the culmination of Hackathon, each team presented the results of their work from the previous 24 hours. A traditional Hackathon is structured as a competition and the team that presents the most compelling or well-built final product gets to see their idea move forward into production, or is otherwise recognized or rewarded. Although Panorama’s Hackathon was not structured as a competition and included no recognition of winning groups, there remained a sense of competition. It became clear that Hackathon had created a stage where individuals and concepts could either shine or falter and be evaluated accordingly.

For our presentation, we first established the strategic fit of panoramaforteachers.com with Panorama’s greater objectives. A few weeks prior to Hackathon Aaron had lead a company-wide meeting where we discussed and acknowledged our organization-wide commitment to making an impact in education. The closing call to action from that meeting was to draft a mission statement that would distill Panorama’s reason for being. Panoramaforteachers.com was one of the first major efforts to build in the direction of our renewed focus on impact. After establishing the strategic fit, we presented the design principles of the proposed product. Our presentation peaked with a demo of a mockup of the product that exhibited the functionality we were working towards and the design principles put into action. There was palpable buzz around
panoramaforteachers.com after the Hackathon presentations concluded. Team members approached Aaron and me to discuss the concept and to urge us to take the idea forward. With the concept well-defined, and a groundswell of internal support, the organization committed to exploring the possibility of bringing the Hackathon project to life.

**Strategic Project - Build Phase I - Alpha**

In the three weeks following Hackathon, I held a series of regular meetings with Aaron to discuss panoramaforteachers.com. At the first meeting we established two central threads to our work. First, we created a plan to further explore the viability of panoramaforteachers.com. We aimed to further refine the vision for the product, to map a sequential progression of our assumptions, and to create corresponding low-cost tests of those assumptions to systematically validate the continued investment of resources. Second, we began planning and mapping go-to-market strategies. At the same time, we began explaining panoramaforteachers.com to carefully chosen clients to gauge their excitement and willingness to pay for the product.

Less than three weeks into this work, Aaron shared the idea with one of the top 100 largest school districts in the nation, Grand School District (GSD). Panorama had just won a substantial RFP process with GSD to facilitate surveys for every teacher in the district as part of a new evaluation system. Our contacts at GSD responded with powerful enthusiasm to the product and stated their interest in paying panoramaforteachers.com. At our meeting on October 13th, Aaron shared this great news with me. With GSD’s

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1 Grand School District (GSD) is a pseudonym used to protect the confidentiality of the actual district.

2 This is the definition of alpha test as provided by the American Software Testing Qualifications Board. [http://www.astqb.org/get-certified/istqb-syllabi-the-istqb-software-](http://www.astqb.org/get-certified/istqb-syllabi-the-istqb-software-)
validation, several of the steps that we were mindfully designing and beginning to step through became unnecessary. First, panoramaforteachers.com had been initially shown valid in the market. Second, the willingness GSD showed to pay for the platform, we were granted freedom from the series of low-cost tests we were designing and granted a larger runway by which to develop our new product. Finally, the response from GSD cleared a path to market for us. While we were not sure if selling directly to school systems with panoramaforteachers.com as a survey project add-on would be the final go-to-market strategy, we could temporarily table that discussion. As a team we recognized that a single sale, even on the first attempt, did not provide us with thorough evaluation; down the road we might find the initial success with GSD to be an anomaly. Still, to make the most of the opportunity, and to follow through on the sale to GSD, we adjusted to focus on building the product.

The product build began with the near-simultaneous organization and launch of three threads of work: engineering, marketing and content development. Sticking to the initial design of the platform from Hackathon, I recruited a team of successful classroom teachers to create the moves and help create the research for panoramaforteachers.com. In order to facilitate this work, I was granted a budget of $1,500.00 per teacher for five teachers. The final content generation team, as it became known, consisted of a group of award-winning teachers who were serving in leadership roles in their schools and districts and included a former Montgomery County (Maryland) Teacher of the Year and a former United States Department of Education Teaching Ambassador Fellow.

Over the course of a roughly six-week project, each teacher on the team first familiarized themselves with the Panorama Student Survey User Guide (Appendix D)
and then reflected on their own practice to capture the strategies that they employed to find success and to share the research pieces which they found most informative. Each teacher submitted 10-15 moves each week and, after the first, week peer-reviewed ten moves from another teacher. When the project was in full swing, each teacher created 10-15 original moves, peer-reviewed 10-15 moves, and submitted an edited set of 10-15. All of this work was facilitated through a set of templates that I developed to direct and focus the content.

To coordinate this work I wrote weekly, and sometimes more frequent, project update emails. The emails directed the whole group of master teachers and coordinated the peer-review and editing process. (See Appendix F for a selection of project update emails.) As teachers submitted moves, I maintained a shared document that captured the title and summary of each move so that members of the content generation team could stay current on the work of other teachers and avoid creating repeat content. In the end, the content generation team produced roughly 250 unique moves, each of which was peer-reviewed for the platform.

Shortly after the content development work got underway, I began coordinating the work of a small group of engineers and one designer to turn the kernel of the idea which was captured in the Hackathon into a functioning platform. At the core of the group was a single dedicated software developer, Stephen Eckenrode, who led the engineering work. Other engineers rotated in and out of the project freely as their time allowed and as the demand of the project required. Ultimately, during the two-month process of taking panoramaforteachers.com from a Hackthon prototype to a functioning platform, the total engineering investment in the project averaged less than one full-time
employee. Because Stephen was the driving force behind the engineer work and
shouldered much of the load, he and I frequently discussed the project, often several
times in a day, to coordinate prioritization and decision-making. By mid-December the
work with the engineers resulted in a functional platform with a backend that allowed me
to load and edit the content created by the content generation team and a front end that
expressed the majority of the tenants of design established by the teacher interviews and
in Hackathon. The result was a functional platform that allowed test users to experience
panoramaforteachers.com.

The third thread of work, marketing, was the least involved at this time, save for
one development. The marketer who joined our loosely defined team, Elizabeth Breese,
pushed our team to rename the platform Playbook. We quickly agreed and Elizabeth
proceeded to win approval from Panorama leadership. The new name was accompanied
by a logo that would allow us to brand the platform and be intentional about the user
experience. Importantly the name and logo gave internal and external stakeholders the
sense of something tangible in a way that the previous names did not.

Figure 2 – Playbook Logo

With a now-functional product in hand, I used a software development strategy
known as an alpha test to further refine Playbook. In an alpha test, the developing team of
a product designs an internal user test by engaging colleagues outside of the development
An alpha test is done when a product is complete enough to provide a functional experience to the alpha testers, but still flexible enough that the development team has the opportunity to adjust the product to the feedback that comes from the test. The Playbook alpha test launched over the winter break, with the official invitation to test sent on December 26, 2014.

The alpha testers included 22 of the 25 employees at Panorama, including multiple who had worked on the development team. I made the decision to include the development team deliberately. Each member of the team wanted the space to step back, and focus on playing the role of the user for an extended period of time. I split the 25 employees into five teams, one each for the topics into which content was organized on Playbook. My colleagues accessed Playbook just as our intended users eventually would and played the role of a teacher looking for a new strategy to use in their classroom. I gave alpha testers guiding questions and captured their feedback and experience in an internally-shared document. (See Appendix G for the alpha test introduction email and Appendix H for the feedback gathered during the alpha test.)

The alpha test closed on January 5th. On January 6th I analyzed and shared the resulting data with the core Playbook development team, Stephen, Elizabeth and Aaron in an after action review. The feedback from the alpha test was clear and compelling and gave the team a strong sense of the work that we would need to do in order to bring Playbook to the next level. The majority of the planned improvements for the next phase of development focused on bringing the actual function of Playbook closer to the intended function that we established at the Hackathon presentation and included tasks

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2 This is the definition of alpha test as provided by the American Software Testing Qualifications Board. [http://www.astqb.org/get-certified/istqb-syllabi-the-istqb-software-tester-certification-body-of-knowledge/](http://www.astqb.org/get-certified/istqb-syllabi-the-istqb-software-tester-certification-body-of-knowledge/)
such as reformatting content to make it more accessible and actionable, improving navigation, and expanding features. In reflecting on process, the group came away committed to structuring our future work in ways that allowed the learning that happened during the alpha test to continue.

**Strategic Project - Build Phase II - Beta**

Through the course of phase I of the build, GSD continued to signal their interest in Playbook in their communications with Aaron. To satisfy their inquiries, Aaron shared screen captures from the alpha product and gave the team a static demo. Satisfied with what Aaron had shown them, the team agreed to formally commit close to $100,000 to Playbook. To make it less risky for GSD, Aaron included a satisfaction guarantee in the contract. If the product failed to meet their expectations, the district could recover the purchase price without question or qualification, so long as they expressed their intention by June 30. With the contract formalized, we schedule a live demo of Playbook for an Associate Superintendent and her team for February 11, 2015.

The live demo deadline created a sense of urgency and excitement across the organization. There was much to be done, a lot on the line, and a unique opportunity before the team. If Playbook were to succeed, Panorama would be taking a successful step into an entirely new space, one that was directly connected to our mission to improve education. Looking to seize the opportunity, Aaron created a new formal responsibility and asked me to be Panorama’s “Product Lead” for Playbook and assigned additional resources to my work. For the next month, and moving forward into the foreseeable future, I was assigned three engineers at a maximum of 80% of their time and one formally designated marketing manager to orchestrate the development of Playbook.
With this designation, the informal authority that I was previously using to facilitate the work of Playbook became formal.

In order support our success over the next month, the now larger team and I implemented a system of product development and organizational learning known as kanban, which requires the creation and use of a physical work tracking board. At a kanban kickoff meeting, we created and prioritized over 40 pull cards, cards that each represented one task, which established a roadmap for the remaining work to be done. Combined, the cards encapsulated all of the work—from content improvement to code development—that needed to happen before the live demo for GSD. In isolation, each pull card was specifically written to identify one single discrete task, identify the owner on the team and forecast the necessary resources to complete the task. In order to hit our product benchmarks, the forecast for the need and use of resources was a critical element to our success.

Over the course of the next five weeks, the team and I met daily at the kanban board and tracked our individual and collective work using index cards. As we progressed, we moved the cards laterally across different stages of execution on the board. When completed, a card was placed into a done folder, but not discarded. The daily discussions served not only as a time to share updates, but also as alignment sessions that helped us support one another and avoid bottlenecks or overlapping work.

The team also utilized HipChat and Google Docs to allow for real-time collaboration. HipChat is an application that allows individuals to chat, share electronic documents, and flag threads and questions for individual and groups in real-time. Google
Docs is an application that allows teams and individuals to collaboratively and simultaneously create, comment on, and edit electronic documents in real time.

Using the kanban structure to coordinate our efforts and track the distribution of our resources, real-time collaboration tools to ensure efficacy and action review meetings to formalize our learning, the team was able to meet the deadline to have a functional beta version of the platform ready for live demo for GSD on February 11th.

In the weeks that followed the demo, we engaged with multiple districts and schools to recruit additional users onto the beta version of the Playbook platform. Our initial efforts found some success. Cristo Rey Boston High School was the first of multiple schools and districts to become a Playbook beta partner.

**Strategic Project - Results**

As of this writing, the results of my strategic project can be best evaluated relative to the “if” components of my theory of action. Using my theory of action as framing, I will explore three main results of my strategic project to date: GSD’s adoption of Playbook, Cristo Rey Boston’s adoption of Playbook (both in beta), and the successful development of Playbook from informal project to beta product. Finally, I will explore anticipated measures of future results that are under development at the time of this paper being written.

The creation of the Playbook product is the primary result of my strategic project from which the other results stem. Viewed through the lens of my theory of action, the process of the bringing Playbook to life began with a series interviews, or an exploration of the value that our beneficiaries experience. The mechanism for creating the initial content for Playbook was a direct partnership with educators, as we empowered
classroom teacher them to establish the first round of moves and research that would bring the platform to life. Finally, each of the beta partnerships channels educator feedback into Playbook Build Phase III, where feedback will be compiled, analyzed and then embedded in Playbook. Playbook Build Phase III is schedule to begin in late March and already has engineering, marketing and other resources mapped to it.

The live demo of Playbook to GSD leadership on February 11, 2015 went very well. The GSD team was happy with the product and excited to extend it to others in the district, specifically including a group of teaching fellows that provide leadership across the district. The administrators on the call agreed to engage as beta partners, meaning that they would explore the platform themselves and provide feedback to the Playbook team at Panorama to help facilitate continued improvement and development before extending Playbook to other layers of their organization to participate in the same way. The team also shared potential ways in which Playbook could become most useful for them. First, GSD shared an interest in using Playbook to host their own professional development content for intelligent distribution to teachers. Second, GSD shared their interest in extending the availability of Playbook to their teachers beyond the timelines of surveying projects.

Framed in my theory of action, this interaction is indicative of the partnership that Panorama developed with GSD around Playbook. The feedback that the team gave for making Playbook more useful in their context speaks directly to our effort to understand the value that the central office customers anticipated. The plan to connect Panorama to feedback from the teaching fellows will create a parallel process with GSD-based beneficiaries of Playbook. The feedback that the GSD team has already given and the
additional feedback that they plan to provide via the teaching fellows will be embedded in Playbook during Playbook Build Phase III.

After GSD agreed to become a Playbook beta partner, Cristo Rey Boston, a local high school, also agreed to become a beta partner. Cristo Rey afforded a unique take on the beta partnership for multiple reasons. Cristo Rey partners with Panorama in a research capacity - they open their doors to us and allow us to run research studies at their school. In turn, we provide them with free survey administrations and reports. So, their engagement with Playbook was one that carried no cost other than the dedication of their time to the introduction and use of the platform. Additionally, the administrators who act as consumers also teach classes in the school, which makes them beneficiaries. After a series of introductory discussions, Cristo Rey’s administrators agreed to engage as a beta partner for Playbook. As part of the engagement, the school will host me for a Playbook kickoff session and, two weeks later, a Playbook beta feedback session.

Analyzed through my theory of action, Cristo Rey’s agreement to participate in a Playbook beta engagement is a partnership with an education organization and educators. Our Playbook beta kickoff meeting will be an exploration into the value that the consumers and beneficiaries anticipate. The Playbook beta feedback session will be an exploration into the value experienced by the consumer and beneficiaries. Finally, during Playbook Build Phase III we will embed the feedback from the Cristo Rey team into our offerings. It is my hope that the sense of partnership and trust for Panorama felt by the educators at both Cristo Rey and GSD will increase when they see the feedback they provide directly represented in the continued evolution of Playbook. The platform was
built to empower the educators we serve, and so are the processes of learning and responding that surround the continued development of Playbook.

Looking ahead, efforts are underway to use Playbook to help Panorama reach more clients, increase the usage of our offerings, and increase their impact and revenue. In one example, Stoughton Public Schools, who are now a client of Panorama and will begin their Playbook beta engagement in March, had been marked as a lost lead, as they had turned down Panorama as a survey provider. However, when Stoughton district leaders learned about Playbook, they re-engaged and ultimately signed.

Right now, Panorama’s core product for users is our report. Unfortunately, following a survey administration, only 70% of users whom we send a report to ever open it. Of those that do open their reports, 69% spend less than three minutes exploring their reports. The Playbook platform is inlaid in our reports and the Playbook team has already begun establishing the backend software to track changes in report opening and the duration of report engagement. Aside from increasing general engagement with Panorama by giving users a completely separate product to interact with, we hope to utilize Playbook as a tool to increase both metrics of usage (access rates and duration of view) on reports.

In conjunction with researchers at the Harvard Graduate School of Education, the North Carolina Department of Public Instruction and a consortium of 11 districts across the state of North Carolina, my colleagues and I are designing and planning a research study to explore the impact that Playbook has on educators who receive the product as part of their survey reports following a student survey administration. The intention of the study will be to identify what, if any, impact Playbook has on the development of
teachers utilizing the platform as part of their engagement with the Panorama Student Survey and will include pre- and post-assessments for both treatment and control groups. The resulting data will allow us to see to compare the progress made by teachers using Playbook with the progress made by teachers not using Playbook.

Finally, we will continue to explore the potential impact that Playbook can create in Panorama’s revenue stream. While the contract with GSD provides some initial indication of Playbook’s value, we cannot yet be certain that this outcome is repeatable. At the conclusion of Playbook Build Phase III, we will begin actively marketing Playbook, beginning with a large-scale PR campaign and public rollout. The implications are potentially significant. Our current pricing for a survey project is $1 per stakeholder per year. Accordingly, if we help a district survey 20,000 students, the contract is roughly $20,000. In this example, if Playbook sells to a district at $20 per year per teacher, and that district has 1,300 teachers, the gross revenue of the contract increases by $26,000, or 130%.3 The increase in net revenue is likely to be a higher percentage increase however, as the majority of the fixed costs of the project are already incurred by the survey portion of the project.

**Strategic Project - Analysis - Lean Product Development**

Across the organization, the work-to-date on Playbook is widely held as a success in terms of both process and outcomes. There are several tangible indicators of success including GSD’s monetary investment in Playbook, and Cristo Rey Boston and Stoughton Public School’s commitment to joining Playbook as beta partners, there are

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multiple less formal, though equally tangible, indicators of success. In our weekly one-to-one meeting on February 4, 2015, co-founder Xan Tanner shared his reflection on my work to “Your commitment to Panorama has been phenomenal. Your work, in terms of both effort and outcomes is extraordinary.” In an email sent on January 7th, co-founder and CEO Aaron Feuer wrote, “Hey man, I just wanted to drop a quick note of huge appreciation for your work on Playbook. Thanks so much for your leadership there. We accomplished a great deal in November and December, and the focus and energy you've assembled this week toward getting it ready by EOM is truly extraordinary” (A. Feuer, personal communication, January 7, 2015). Less tangible indicators of success are also found through the proliferation of work structures initially developed within Panorama as part of the work of Playbook; the entire engineering team adopted the kanban process to organize and facilitate all of their work, and after action reviews and before action reviews are now held for projects in the engineering and client services teams. In understanding why the work found success, Hoppman et al.’s and Welo et al.’s analyses of successful lean product development models effectively frame the different component of my work.

Hoppman et al., “hypothesize that Lean product development needs to be understood as a system of highly interwoven components that only in their concurrency lead to high performance in product development.” Listed in the order of prominence across both Hoppman et al.’s and Welo et al.’s studies, the authors found the following principles/components present in lean product development models at the corresponding rates: customer defined value - 92%, strong project managers - 88%, culture supporting excellence and improvement - 67%, simultaneous engineering, set-based engineering,
and responsibility-based planning and control - 63%, and organization for functional expertise and cross functional integration, a chief engineering system and workload leveling all appeared in 50% of models. In analyzing the structures that I created to facilitate the work of my strategic project, I find that the development of Playbook occurred via a system akin to Hoppman’s description of the one needed for lean product development success, a “system of highly interwoven components.”

As the Product Lead for Playbook, I used teacher interviews to establish an initial beneficiary-defined description of value. My work in empowering the beneficiary to define the value that Playbook strived to create did not stop there; Playbook is built to continually position teachers to define the value they are experiencing, and track behavior patterns that may serve as indicators of value. On the front end, Playbook accomplished this with a series of product features, like ratings and a “My Playbook” feature that allows teachers to save, compile and share moves. On the back end of the product, we maintain metrics to track customer behavior that we will couple with data from interviews and focus groups to identify leading indicator metrics of value-producing interactions with the platform. Ultimately, these leading indicator metrics will direct the design and development of Playbook to create greater value for the beneficiaries as their behavior and feedback define it.

Because Panorama’s mission is to improve education and my own personal and professional commitment is to do the same, I led the Playbook team in actively disambiguating our customers into consumers and beneficiaries. The entire team centered our development work on empathy and value creation for the beneficiaries who, in this case, are teachers. I lead the team to set aside concern for the creation of value for the
consumer, or direct purchasers, of Playbook until beta testing. The vision in doing so was three-fold. First, we believe that if the product created enough value for beneficiaries (teachers) then the consumers (administrators) will be moved to purchase it. Second, I posited that if the product produced value for the consumers but not the beneficiaries, it would not only fail by our own measures, but potentially undermine Panorama as an organization. Finally, the team would gather feedback from consumers during the beta test and be able to adjust the platform for success. In these finals ways, I cemented the customer-defined value, for both beneficiaries and consumers, in the foundation of the team.

Integrated into an organizational frame for the team, the structures that I employed to facilitate our work, principally the kanban board, the 15 minute daily meeting, and individual task assignment with autonomy created cross-functional integration and simultaneously allowed each individual to exercise their unique functional expertise. When team members took a pull card from the board, they were trusted to exercise their own judgment to accomplish the corresponding task. Still, all of the work remained integrated across the team as a result of the initial prioritization of tasks and the daily meetings, which included progress updates, asks for help or review, and application of process learning. While no product moved forward without review from the larger group, no teammate was required to ask for help. If a teammate felt comfortable moving ahead independently, their autonomy and expertise was respected. With each team member concurrently developing different aspects of Playbook, the team engaged in simultaneous engineering.
I was able to pursue set-based engineering, the process of building and testing multiple prototypes to facilitate learning and product development, across Playbook as a whole by leading the product through multiple iterations. However, as individual team members engaged in independent work, we largely avoided set-based engineering in exchange for solution-focused work processes. This decision was driven by the responsibility-based planning and control that I instituted at the initial kanban kickoff meeting. At the meeting, I established multiple feature, functionality and timeline benchmarks for Playbook, but removed myself from the discussion of forecasting and allocating resources. The other members of the Playbook team mapped our total sum of resources across the benchmarks and assigned set amounts of resources to each pull card. As a result, any team member who was assigned to a pull card began the task with a constrained amount of time. In most cases, the time constraints drove team members towards solution-focused builds. In a few edge cases team members used set-based engineering, but it was not the norm. As the project progressed, the team and I reviewed the product benchmarks and re-mapped our timeline and roadmap based upon the variance we found.

After the definition and prioritization of tasks, different members of the team were able to self-assign work. Thus, there was constant variance in the workload across the team. Workload leveling usually refers to an effort to create equality in the effort required from each team member. In our case, workload leveling was not intended to create equality. Instead, our system leveled the workload for each individual in calibration with their capacity. Each team member adjusted their workload according to the professional and personal competing demands they balanced. This approach to
workload leveling dovetailed with responsibility-based planning and control, and functional expertise to further foster a growing culture of trust, commitment, autonomy, support and improvement.

Throughout the project I received feedback, unsolicited and solicited, that I was exercising strong leadership in facilitating the product development work for Playbook. This feedback came from company leaders, project team members, and project outsiders at Panorama. In my effort to provide strong leadership, I focused on multiple theories of leadership and capitalized on the core principals that I identified in my interviewing process: Panorama’s organization-wide commitment to fostering agency in others and practicing goodness.

The principles of David Anderson’s kanban system, a work management structure created to adapt lean business methodologies for product development, guided my work. Beginning with Anderson’s fourth principle—to allow for leadership at all levels of product development—my actions as the product lead for Playbook began with the creation of multiple structures that fostered agency in my teammates as described previously. Welo defines the chief engineer system as, “a system where the overall ownership of the product is concentrated to one single person, who is given the authority and has the (technical) competence to be the ‘customer representative’ in the technical design decision process...” (T. Welo, personal communication, February 25, 2015). This description fits perfectly with the position from which I lead on Playbook. Though my authority transitioned from informal to formal during the course of the project, there is no evidence that it wavered. As the only former teacher or person with school district experience on the team, I had by far the greatest amount of competence to represent our
customers. Setting aside competence, I am both professionally and personally passionate about empowering teachers as a path to improving education. Because my own leadership values were aligned with Panorama’s organizational values and my personal and professional values were aligned to the project and my role, I was able to lead authentically - that is to manifest honestly and clearly and to lead with a sense of purpose; I provided strong project management via a chief engineering system.

Clayton Christensen (2006) defines one way to change culture in an organization, “to find or create a set of new problems that the organization must confront repeatedly and successfully. These problems must demand a different pattern of response, which pattern ultimately will constitute the basis of a changed culture.” Multiple aspects of Playbook product development were new challenges for members of the organization: building a product from a core of beneficiary-defined value, balancing autonomy with daily reviews, and working on a clearly defined team with clearly defined benchmarks. In the past my Panorama colleagues built products and features based upon internal analysis, had inconsistent autonomy and reviews, and worked with an undefined and ever-shuffling set of team members. The structures and goals of the Playbook product development work fit directly into Christensen’s method for changing culture.

My task as product lead was to leverage this window of culture-change opportunity to inspire a culture of excellence and improvement that supported a successful product development process. The improvement portion of the culture was more easily established than the excellence portion. By leading the group through a series of prototype creation, reflection, and re-prototype, I created a practiced commitment to improvement that was bolstered by the adoption of kanban and the daily team meetings.
My challenge then became to instill a cultural sense of excellence without sacrificing the trust or autonomy that made responsibility-based planning and control, workload leveling and organizing for functional expertise and cross-functional integration generative aspects of our work. I succeeded in this effort by first leading with transparency and vulnerability—at team meetings I shared my work and asked the team to evaluate the quality. When others presented their progress I asked the team to share their opinions to the questions, “Does this decision empower teachers in the way that we aspire to?”, “What could we do to improve this?” and “Are we ok with not making that improvement now?” The often-challenging answers to those questions inspired several heated discussions, each of which involved an impassioned member of the team advocating for an improvement they felt necessary. As these discussions continued to happen over the course of our daily meetings, members of the team began to identify tacitly, individually and collectively, as advocates for delivering excellence to teachers.

Ultimately, when I combined the principles derived from the work of Hoppman et al. and Welo et al., and integrated them with Anderson’s work on the role of leadership and Christensen’s work on cultural change, I created a comprehensive and nuanced approach to structuring and managing the work of my strategic project that resulted in not only a successful project, but a cultural impact that invested the team in excellence and the production of value for our beneficiaries.

**Strategic Project - Analysis - Organizing to Execute/Learn or Work Groups**

In *The Competitive Imperative of Learning*, Amy C. Edmondson argues that organizations that organize to learn instead of organizing to execute build a stronger
foundation for continued success. In explaining how organizing to learn can be fostered, Edmondson notes,

before execution-as-learning can occur, organizations must fulfill one big prerequisite: They need to foster psychological safety. This means ensuring that no one is penalized if they ask for help or admit a mistake. Psychological safety is crucial, especially in organizations where knowledge constantly changes, where workers need to collaborate, and where those workers must make wise decisions without management intervention. (p. 5)

Figure 3 – Edmondson’s (2008) Accountability/Psychological Safety Matrix

![Psychological Safety Matrix](image)

*Figure 3. Edmondson’s Accountability/Psychological Safety Matrix. Adapted from The Competitive Imperative of Learning. Harvard Business Review, 86(7-8), 60-68.*

As noted in figure 3, Edmondson posits that psychological safety and accountability are not mutually exclusive. Instead, she argues that the combination of high psychological safety and high accountability actually move organizations into a productive space, which she defines as the learning zone. On our team I created psychological safety by welcoming and posing open questions and allowing my teammates to not only answer those questions, but to implement their solutions.
Additionally, I encouraged “asks for help” at each daily meeting. Finally, I engaged the whole team in considering the challenges we could anticipate, but not yet solve.

With psychological safety established, Edmondson describes a four-step process for achieving execution-as-learning. In step one, provide process guidelines, an organization commits to a set of routine processes for capturing learning. Step two, provide tools to enable employees to collaborate in real time, is meant to pay heed to the fact that unforeseen challenges are inevitable and may go unresolved without a structure that allows for responsive collaboration amongst the team. Step three, collect process data, identifies the need to focus discreetly on how work is done, as opposed to what the work produces. The fourth and final step, institutionalize disciplined reflection, is intended to ensure learning from the process data that is collected in step three.

As the development of Playbook progressed, the team succeeded in Edmondson’s step one by developing and adopting a set of routine process that captured our learning while facilitating the execution of our work. The processes and tools that we used to capture learning included the kanban board and the daily meeting structure. The team accomplished step two via the use of HipChat and Google Docs, both of which facilitated real-time collaboration. To accomplish step three, the team convened at the end of project phases to hold after action reviews and for fifteen minutes each day during a daily meeting where we shared process learning and process issues. Finally step four was achieved via the combination of after action reviews and before action reviews. In the former the team compiled and analyzed process data to formulate insights to inform subsequent phases. In the before action review, the team deliberately adapted those the
work process and structures for the coming phase so they reflected our learning. Figure 4 illustrates all of the structures in a sample timeline for a two-week phase.

Figure 4 – A sample sub-project timeline organizing our work tools and processes into Edmondson’s four steps for achieving execution-as-learning.

Nearly every tool and process evolved over the course of the development of Playbook. Daily meetings were moved to the same time every morning to create longer spans of work. To safeguard team alignment, a team member could only move a pull card on the kanban board during a daily meeting. After and before action reviews evolved to include fewer reflection prompts so that richer discussions could flourish. Because of a confluence of work threads and team members, and a shared resource pool, the Playbook HipChat room was expanded to become the Playbook and Analytics HipChat room. The continued and concurrent adaptation and improvement of our tools and processes and the successful execution of work suggest that the team used the four steps outlined by Edmondson to function as a group organized to learn.

My ability to create shared commitments to learning, improving process and achieving excellent outcomes can be traced back to my residency recruiting process. The second core value I identified in Panorama as my residency host site—placing equal emphasis on how the individuals engage and what they accomplish—established a
precedent for investing in and working on the simultaneous improvement of process and outcomes.

**Implications for Self**

My residency work at Panorama has been engaging and intense, a source of ample content for self-reflection. From it, I draw insights into my strengths and weaknesses as a leader and how both can manifest as opportunities for me to create value for my organization and those it serves. For the first time, I also see that my strengths can manifest as threats to my ability to create value for my organization and those it serves.

**Identifying and Holding Tensions**

Ron Heifetz (1994) describes the need for a leader to create and maintain a holding environment—a place where members of a group feel safe enough to continue in their work, but uncomfortable enough to pursue change. As a leader of others, I have a high tolerance for tensions that arise in the course of productive engagement. Whether the tension experienced in a group is the result of stress created by ambiguity, slow progress, uncertainty, or oppositional teammates, I find myself quickly able to identify the sources of the tension and hold multiple perspectives simultaneously while maintaining focus on the pursuit of a larger vision. Frequently, when others are stressed or riled, I feel myself calming down and intellectually zooming out to scan the larger landscape. In those moments I know that the sustained composure of the group is critical to continued success and that I will keep a steady hand on the wheel in order to honor our larger mission. I am at ease in validating individual and group concerns without avoiding or diminishing sources of tension. In doing so, I am often able to keep my team churning forward through conflict and uncertainty. My strength in leading groups through complex
challenges came to bear multiple times in my residency, frequently within the work of my strategic project and recently as the Panorama representative to visit a client after an accidental breach of trust.

While my residency has shown me that my ability to lead groups to identify tensions and sustain holding environments can create value both internally and externally, my ability to exercise this skill as an individual is a weakness. This is especially apparent when I find myself presented with multiple potential tasks across an array of ambiguity. Frequently the more ambiguous tasks are of greater strategic significance or hold more potential value. Still, I find myself pulled to the more technical and less ambiguous tasks where I feel assured of my ability to make progress. In recognition of this pattern, my residency supervisor encourages me not to “fill up on bread at the buffet” and to constantly ask myself if the tasks I am selecting position me to make my greatest contribution.

**Goodwill**

I care deeply about people and I make sure to communicate my care. This was true for my students when I was a classroom teacher, for the teachers I served in Baltimore and for my classmates at Harvard. It is also true for my colleagues at Panorama. During my residency, I showed my care in many ways. On the majority of workdays I write a note of gratitude for a coworker detailing a moment from the day when the colleague did something that I appreciated. When leaving the office I say goodbye to every person before I leave. If I make a snack in the kitchen, I often make extra for my colleagues. These behaviors have led some of my colleagues to view my actions as intentional efforts to create goodwill. While I think that assessment is accurate,
I demonstrate care and compassion from a place of care and compassion, not from a place of self-interest. Having these actions assessed by colleagues as self-interested was disappointing, and illuminated a potential negative outcome of my actions.

Still, the goodwill my colleagues share for me, whether a result of the care I demonstrate, or not, seemed tangible when my coworkers would volunteer at staggering rates for every request for help I had. On one occasion I organized a group effort to copy-edit content that was not only unsuccessful, but exposed a potential downside to the power of goodwill. In this instance, my colleagues were volunteering for work out of a commitment to me, and not because their skills were well suited to the task. As a result, the work I intended to accomplish was left incomplete and my colleagues and I all lost valuable time. While I am committed to continuing to demonstrate caring and compassion for my colleagues, I will evaluate my asks of them with a more critical eye in the future.

**Intensity**

Through the majority of my residency I worked intensely. At times I dedicated myself to consistent 65+ hour workweeks. The decision to work a high number of hours was mine. Some of my colleagues at Panorama work consistent 8-5 or 9-5 schedules. Others work well over 65 hours every week.

I chose to work long hours because I found joy in the intensity. The work in my residency, and at Panorama in general, has the potential to make a large impact on students and teachers, making it inherently motivating for me. Additionally, my colleagues are amazingly talented and many of them are willing to dive in on a task or project and work long hours. These and other factors combined to make working long
hours a fun, exciting and motivating experience. Partially as a result of the intensity with which I worked, I was able to build strong relationships and accomplish a great deal in a short amount of time.

Still, the intensity of work was not without cost. I often ran low on sleep and rarely, if ever, exercised. I missed multiple events with family and friends and did not maintain the level of engagement that I had aspired to with the Harvard community or my classmates.

As I continue in my career, I hope to temper my affinity for intensity. I do not want to avoid intensity altogether, as I am not willing to forgo the excitement I feel in jumping in on a task or project. Instead, I aspire to allow myself intensity in moderation. Ideally, I will create planned and deliberate moderation that fosters the healthy engagement I hope to create in my life outside of work while still allowing me to work with great intensity on occasion.

Authenticity

Placing two of my own core values at the center of my residency matching process and finding a residency site that shared my commitment to those values paid dividends throughout the course of my work with Panorama. These values, a shared focus on not just what we do, but how we do it and a deep commitment in fostering agency in others, came to bear internally and externally. Internally, the Playbook team came from a culture that already asked them to consider not only the outcomes they worked to achieve but also the ways in which they engaged others along the way. This experience created a level of readiness for Playbook team members to engage in a deliberate process of examining and improving our outcomes and the processes that brought us to those
outcomes. Similarly, our organization-wide commitment to fostering agency in others opened the door for the team to be able to balance building a platform that created value for not only our consumers, but also our beneficiaries. Whether I was managing internally- or externally-facing processes, the alignment of my values with Panorama’s allowed me to lead authentically.

Bill George and Peter Sims (2007) describe leadership principles as a leader’s values put into action. To lead authentically, George and Sims argue, an individual must define both values and leadership principles. Expanding on the ideas laid out by George and Sims, Nick Craig (2014) posits that authentic leadership can only happen when ego is set aside for purpose and a leader acts with a powerful sense of clarity of self. I have long had a clear sense of my values, leadership principles and self. Still, I have not always found myself in the positions where I was able to lead with these tools. In those times, I believe that arrived to my work authentically but struggled to lead. My residency shows me that the ability to lead authentically requires more than just the leader’s readiness. It requires the proper fit of the organization’s values and the work to be done to the leader’s values and skills. Looking forward, I will continue to search for scenarios that present a fit that allows me to exercise and develop authentic leadership.

**Implications for Site**

My strategic project created a unique opportunity for organizational learning for Panorama. From inception to beta testing, the process of creating Playbook was novel to Panorama in many ways and created multiple lessons for Panorama as a maturing organization.
Create the Space for Creativity

With a large and rapidly expanding workload, the daily effort to meet client demand can seemingly exhaust our individual and collective capacities. Looking at the work to be done, the organization might adopt a “nose to the grindstone” mentality and redouble efforts to increase team and individual efficiency or output. To do so, however, would undermine one of the greatest strengths the company has: creativity. Multiple members of the team at Panorama have backgrounds in the arts—the staff includes multiple professional musicians and published authors. Creating the space for these individuals to step away from immediate business needs and apply a fuller array of their talents to the work proved productive for Playbook and will likely continue to create value for the organization.

The Hackathon, which has since been adopted as a twice-annual event, created the space for creativity. It did so by designating a set block of time where employees were given explicit directions to communicate their “offline” status to clients and focus their full attention on projects of their choosing. In the days building up to the Hackathon, a buzz built as coworkers, excited about the blank canvas before them, began sharing new and exciting ideas. By the time Hackathon began, the office was filled with anticipation and energy. The 24 hours of Hackathon created a platform for that energy to be immediately applied. A few of the ideas that hatched at Hackathon emerged from the event with momentum and widespread support, two conditions which can be otherwise difficult to create at Panorama. Playbook and other Hackathon projects have pushed the thinking and learning of the organization in the months since.
As Panorama grows and the organization matures, finding ways to protect and inspire creativity are likely to get more and more challenging. Regardless of the challenge, I argue that safeguarding and promoting creativity should be an institutional imperative. Creativity is a unique strength at Panorama and has the opportunity to help the organization fulfill its fourth value—to go for the moonshot in education. (Appendix C.)

**Clearly Define Parameters**

**Team Membership**

Prior to Playbook, Panorama did not approach projects with dedicated staff. Instead, staff floated from project to project and chipped in when they had the capacity to do so. This was true across teams. Client Services and Outreach team members would join Request For Proposal efforts. Engineering staff would bounce between support requests and platform enhancement. In the case of Playbook, a designated and clearly defined team executed the project. While the demand of the project varied over time and the size of the team was not static through each build phase, the available members of the team did not change.

My project shows that maintaining consistent team membership can create a sense of ownership that motivates each person. When each individual knows exactly what he or she is contributing, how his or her work matters to the larger project, and what will not be possible if the task at hand is not completed or completed optimally, they feel a greater sense of purpose and motivation in their work. When team membership stays consistent, time is not lost bringing varying individuals up to speed on the lessons the team has learned to date, the vision of the work or the processes and structures that the teams has
committed to. By limiting these initial costs, teams at Panorama can direct more time and energy to the work of moving their projects forward. As a result, the team will be able to bring their product to a greater level of functionality and polish in a shorter time than Panorama has realized on projects with undefined and variable team membership.

**Time, Resources and Scope**

Just as the staff dedicated to Playbook was clearly delineated, so was the scope of the project and the time and resources available. Each phase of Playbook had an associated deadline. Initially the Hackathon presentation pushed Aaron and I to create a viable mockup of the product. In November the team pushed hard to create a product that could be rolled out over the winter break for the internal alpha test. In the most recent build phase, the team had the clearly established deadline of the live product demo for the leaders at GSD. With hard deadlines at hand and a defined set of team members, we did simple math to devise the total number of engineering, marketing, and designing hours the team had to draw from, thus we defined our complete store of available resources. We then used the kanban system of pull cards to estimate the amount of hours each card would require to complete. Working in order of priority we forecasted exactly how many and which cards would be complete (and what that meant for the functionality of the platform) by a given deadline.

By clearly defining the time, resources and scope of a project, Panorama can position project teams for greater success. Still, in the actual execution of the work, teams may find their forecasts to be inaccurate. At times a team may simply misestimated the hours a card will require. Other times, engineering staff might be forced to dedicate capacity to client projects demanding immediate attention. However, the thorough
planning a team does to define the parameters of time, resources and project scope, when
dovetailed with a structure for frequent and regular communication, (daily meetings in
the case of Playbook) position the team to overcome disruptive forces relatively
smoothly. In these instances, a team that has defined time, resources and scope will be
able to shift resources and scope to effectively meet the unchanging deadlines.

While clearly defined parameters will empower teams at Panorama to execute
more efficiently, they will also allow teams to learn more efficiently. Inaccurate
forecasting, resource allocation and capacity all become much clearer when teams begin
tracking those aspects of a project and relying on the tracking to organize their efforts.
For this reason clearly defining project parameters will prove beneficial for the execution
and learning that Panorama is able to do.

**Use Cross-Functional Teams**

The final Playbook team included staff from the engineering, marketing, design
and client services team. Each team member served as a representative of their team. This
meant contributing points of view and opinions from the perspective of their departments,
navigating the Playbook team around hurdles and barriers within their departments, and
advocating for processes and outcomes that benefited the work of their department.
Subsequently, the development of Playbook was less challenging than it might have been
and more easily gained buy-in from teams who were happy to see the intuitive ways that
the product interfaced with their existing structures and processes.

In Panorama the majority of work happens within the silo of a department with
formal cross-department check-ins and reviews that happen inconsistently. The success
of the Playbook development process suggests that establishing a team that works
continuously and collaboratively on a project can lead to more efficient work with improved outcomes.

**Implications for Sector - Creating Public Value from a For-profit**

**Disambiguate Customers into Consumers and Beneficiaries**

One way that the work of my strategic project can be interpreted is as an effort to lead our organization in deliberately creating public value. In their publication “Creating Public Value: Transforming Australia’s Social Services”, (2014) Ernst & Young, Australia teamed with Mark Moore in an effort to improve the efficiency and impact of public organizations. In doing so, they defined public value as “using government assets to produce a good and just society. This idea is challenging, because it focuses on the collective. Whereas private value is associated with satisfying individual desires, public value is about achieving social outcomes—not just end client satisfaction.”

This definition is important because it raises a potential tension between working to achieve social outcomes and working to satisfy end clients. If by end client what is meant is the purchaser of a product or service, the possible world of value creation is indeed limited in that it is confined to what value can be proven through purchases. However, when an organization disambiguates their end clients into consumers and beneficiaries, the universe of value creation is greatly expanded. The market-proven behavior of the purchasers, which I previously described as the consumers, comes to represent only one avenue for value creation where there may be many. In the case of Playbook we chose to focus on value creation for teachers—one of multiple potential beneficiary groups—in addition to value creation for our consumers, usually school system administrators. The teachers are removed from the purchasing decisions made by
our end clients, but can still be served, and measurably, with value despite the immutable lack of market data. Still, given intentionality and commitment, value creation for teachers, and as defined by teachers, can be brought to bear.

The first and most critical step to this work is to separate the single group of customers into multiple groups, each defined as a beneficiary or consumer. Once each group is defined, the team doing the work must identify the ways in which they will deliver value to each group and how each group will validate the value that they are receiving. In validating the value, no group’s control can be transferred to another group. In this way, the for-profit leader chooses to expand the arbiter of value from one group to several.

**Doing Good By Doing Well**

In my time at Panorama the organization has invested heavily in multiple resources to support school systems and educators and then released them for free to the public in open-source format. In the most striking example, Panorama invested over $100,000 in the development of a student survey to assess Social Emotional Learning and immediately open-sourced the tool upon its completion (Manjoo, 2014). As of March 10, 2015, we are on the verge of releasing a second survey tool in this same way, this time for family members. Without publicizing it, or even sharing the information with our clients, we have repeatedly taken on contracts at a financial loss because we believed in the work of the client and wanted to support their efforts. Our financial success via other channels, including funding and projects, gives us the opportunity to pick spots in which we choose to focus solely on our mission to improve education. In the majority of instances, however, we pursue our financial bottom line concurrently with our mission.
bottom line. That is, our work is profitable while generating what is frequently public value for our customers. In nearly all cases, our customers would find it impossible to produce the data gathering, data analysis and reporting services that Panorama provides for anywhere near the price that we charge. The difference between a customer’s cost of recreating the products and services we provide and the price they pay us represents value to our customers and their stakeholders. When Panorama can consistently deliver this value while making a profit, we are able to expand and to offer more and better products and services to our existing customers and to serve more customers.

Still, in my experience I frequently observe a thought process by those working in education that groups for-profits into a category rife with negative connotations and non-profits and public institutions into a safe, or positive category. This generalization is not necessarily unfounded. For-profits have been caught offering bribes to public employees who have in turn been caught accepting those bribes (“Five Charged,” 2012). However, the generalization belies the complete picture. Nonprofits have at times joined for-profit and public institutions in squandering capital and acting selfishly and irresponsibly (Rhode, 2009). Ultimately, there are public, nonprofit and for-profit organizations acting with mission-driven fidelity and others acting in a way that undermines students and school systems in each of the three camps. To support any organization that aims to serve students and school systems is to cast a vote of confidence. If decision makers and stakeholders across the education sector do not hold each organization uniquely accountable, value will inevitably be lost as votes of confidence are issued on “party lines”. Panorama and other mission-driven for-profits are able to create more public value as they find more financial success. The crux of the work for the mission-driven for-
profits is to keep the success of the mission an equal or higher priority to financial success. The crux of the work for the rest of the sector is to maintain a critical perspective that assesses each organization’s outputs independent of their status as a public, nonprofit or for-profit organization.

**Selecting the Right Methodologies**

In the education sector the majority of administrators, from the vice principal to the highest levels of the district leadership, are former teachers. Most states require that a superintendent has served as a teacher. Among many outcomes, this policy assures that the leaders in systems of schools have some level of experience for what work is really like in a classroom and, ideally, some level of empathy for the work of teachers. This policy also results in career educators managing annual budgets upwards of a million dollars and staffs numbering in the dozens, often with little formal preparation for either task. Many states have loosened the teaching requirement and several districts have successfully waived the prerequisite in their superintendent placement processes (Cournoyer, 2011). In the case of Cathie Black, a superintendent for whom the teaching requirement was waived, her tenure lasted less than 100 days and was marked by insensitivity and perceived aggression towards community members (Webley, 2011). Black’s predecessor Joel Klein, who had a long and, by many accounts, successful tenure, was also hired under the same waiver as Black. The idea behind both Black’s and Klein’s hiring was that the superintendency is a traditional management position and what it requires is proven traditional management capacity.

If business management can be considered a methodology, it is not the only one to find its way into systems of schools. District administrative offices are packed with
PhDs putting the skill sets they honed in academia to use in offices with names like “Research and Evaluation”, “Achievement and Accountability”, “Assessment, Research and Data Analysis” and “Shared Accountability.” These researchers bring skill sets that are intended to help districts identify empirical questions and provide empirical evidence to, ultimately, help drive the improvement of student outcomes. In the education sector there is a gap between researchers and practitioners. Researchers produce research that is written with other researchers as the intended audience, not the practitioners for whom the information presumably matters most (Mehta, 2013).

Research and management methodologies are not inherently divorced from supporting the improvement of teaching and learning in systems of schools. The value chains in school systems are complex to the point that proving causality across several layers of hierarchy is a tenuous endeavor. Research methodologies inarguably create value for systems of schools by providing clear assessments of where and in what ways the organization and large chunks of the organization are improving. Management methodologies have helped systems of schools use resources more efficiently and advocate for more equitable funding. Similarly, education methodology practiced and honed at the teacher-level helps principals and district administrators who are closely connected to teaching and learning better support those who directly support students. Still, these same methodologies are not necessarily productive in contexts far removed from the classroom. One can imagine an education methodology, say constructivist instruction, bearing little fruit in the operations budget meeting. Still, the methodologies we choose matter.
The success of Playbook began with the selection of lean methodology for the product development process. At the core of lean methodology are customer-defined value and a relentless focus on maintaining empathy for those being served. Methodologies that hold customer-defined value and empathy at the core force the actors in a system to critically consider their own actions and directions as acts of service. In contrast, the successful execution of most other methodologies does not require the actors to look outside of their own work or chain of command for the validations of the value they aim to produce. In adapting these otherwise apparently productive methodologies to include empathy and customer-defined value at their core, the sector stands to improve.

Conclusion

Looking Across the Education Sector

When I began the Ed.L.D. program, my career in education was contained within a public organization, Baltimore City Schools. After my first year of coursework I spent a summer working in the Strategic Program Pilots office at Year Up, a successful and growing national nonprofit that is renowned for their work in workforce development and addressing disconnected youth. With experience attempting to spark progress and create public value in the public and non-profit worlds, I have a sense for the strengths and weaknesses of both. Part of what drew me to Panorama was the opportunity to explore how impact can be made by a mission-driven for-profit.

Through the arc of my capstone, I described my effort to weave together methodologies germane to for-profits, particularly startups, and methodologies common in non-profits to help focus the organization on creating value for teachers in a way that simultaneously strengthened the financial position of the organization. My aspiration was
and is to create the beginnings of a path by which for-profits can explicitly pursue the creation of public value in a way that is recognizable and trust-worthy to those that for-profits might partner with or serve. Without the recognition of the possibility that for-profits can prioritize commitment to public value and the trust to give them an opportunity to do just that, we will not realize our full opportunity to improve education.

At present, all of us in the education sector – public, non-profit, and for-profit – are collectively failing our country’s students. I believe that we will be able to make more progress and faster by freeing ourselves of generalizations and focusing our energy on critical analyses of opportunities to improve education. About halfway through my residency, I was asked to join a conference call to by staff at the United States Department of Education (USED). The USED staff recognized that Panorama was at the leading edge of understanding, promoting and assessing social emotional learning and wanted us to share our insights with their organization and a large national non-profit that also joined the call. The hope was that the call would lead to collaboration between the non-profit and USED. At the outset of the call and at the end of the call USED staff emphasized that the call was not a vote of confidence in our organization or an arrangement of business. We had been asked specifically to only share our knowledge and to be deliberate in not transitioning the call to a “sales“ call. Just as the call drew towards conclusion and Panorama staff signed off, the non-profit and USED began brainstorming ways to work to bring SEL to reality in school. With a deep sigh I thanked those on the call and hung up. More than either organization on the call, we had the deepest capacity to do the working of making SEL count in school. However, our status as a for-profit made the discussion a non-starter. Everyone, American students included,
missed an opportunity and lost potential value because of a failure to recognize that a for-profit can act with fidelity to creating public value.

The work of creating and delivering Playbook began with insights drawn from teachers and the development process continues to position teachers as the directors of our work, with the goal being to help them better serve their students. Unencumbered by the bureaucratic processes and regulations, as compared to the projects I lead and supported in public and non-profit organizations, Panorama was able to move more quickly to bring my strategic project, and with it teachers’ visions, to life. I hope that this capstone serves as a testament to the reality that mission-driven for-profits can commit to, persistently invest in, and create public value and that they have unique advantages as compared to public and non-profit organizations.

With this in mind, I hope that readers of this capstone 1) critically consider every organization they engage with, regardless of the sector from which it emerges and 2) in finding or creating the company from which they will work, consider the potential for their greatest contribution to be made from a for-profit.

**Considering the Molecule**

In the chemistry world, water, because of its fantastic ability to dissolve other materials, is known as the universal solvent. Water’s ability to dissolve materials results from its adhesive nature. Water sticks strongly to other materials. The adhesive quality of water is one half of what makes capillary action—the process that many plants take advantage of to get the hydration they need to survive—possible. The other quality of water that makes capillary action possible is cohesion, or water molecules sticking to each other. When water encounters the tiny tubes in the stem of a plant it adheres to the
walls of each tube, and cohesion keeps the water molecules connected. Cohesion and adhesion continue to work hand in hand as the water climbs the tube and, ultimately, keeps the plant healthy and alive. The reason that water is both cohesive and adhesive is because of the structure of the molecule. The angles of the hydrogen-oxygen bonds create a unique charge that results in the cohesive and adhesive qualities that have stunning impacts on our planet.

In the same way, I think the attention to detail that I gave to the first molecule of the process that resulted in the creation of Playbook can teach us lessons for how an organization can structure itself to create dual bottom line value. Just as the angles of the bonds in a water molecule result in adhesion and cohesion, the work processes that I established to create Playbook included some characteristics that I believe resulted in impactful qualities. These characteristics, such as customer-defined value, organizing for functional expertise and cross-functional integration, and constant communication, fostered the development of core qualities in the group. These qualities—a deep investment in their work and commitment to creating value for beneficiaries—carried over into other projects, strengthening Panorama’s overall capacity to deliver on its mission to improve education in the United States.

It is my hope that readers of this capstone will deeply consider the molecule of their own work. What characteristics should be present in the processes that readers, as leaders in the field, create, and what qualities do they believe will arise in their team given those characteristics? In this paper I described the intentionality with which I chose my place of work and fit the characteristics of our work processes to the context of the organization, the task, and the goals of the work. While I found the methodologies that I
applied to be of great use and feel they should be used more often and more broadly, I also think that they are not requisite to the design of an optimal molecule.

The work of selecting and implementing characteristics like processes and communication structures might seem small or even unnecessary to some, but I argue the opposite. If hydrogen bonded with the oxygen at a different angle, water might not be adhesive or cohesive and the myriad impacts and outcomes that cascade from those qualities may simply never have been.
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A. (2014, September 6). Teacher Perspective on Usefulness of Feedback and Reports [Personal interview].


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L. (2014, September 14). Teacher Perspective on Usefulness of Feedback and Reports [Telephone interview].


At Panorama Education, we...

1. Are the best part of every client’s day

At Panorama, we delight our clients—each of us, regardless of role. We set high but reasonable expectations, and we exceed them. Our clients look forward to every interaction with us because we are likable, thoughtful, competent, professional, and fun.

2. Recognize how important our work is to each person we serve

Though we work at scale, we always appreciate how important each project is to everyone involved—and each project is just as important to us as it is to them. Our work matters a great deal, and we take that responsibility seriously. If there is a problem with one teacher’s report out of ten thousand, it is mission critical for us because it is mission critical for that teacher. Even if our workload is particularly heavy, we treat each project as if it were our only and most important project.

3. Obsess over our product

We believe that an extraordinary product, powered by extraordinary design and technology, can help improve educational outcomes across the world. Many education companies choose to build a product that is just good enough to win the RFP or to make the sale. We know better. We know that accepting mediocrity, even if the current market allows it, is a short-sighted strategy. Our long-term success and our ultimate impact will depend on having the best product.

4. Go for the moonshot in education

Inspired by Google’s ideology around “moonshot thinking,” we believe that improving
education will require not just incremental fixes, but also radical innovation. We tackle the enormous challenges that matter most, not just the small issues that nibble around the edges of those problems. We serve our clients’ current needs, but we also deliberately set aside time and other resources to consider things that our clients wouldn’t even think to ask for. Learning from our customers means asking our clients what problems we can help them solve, and then going a step further to figure out what ideas are so big that our clients might not even be thinking of them yet.

5. Are humble

Being humble is a worldview. Being humble means always learning, always looking for brilliance in others, and always being open to the possibility that we are wrong. We have the boldness to innovate and the confidence to support our clients, but we recognize that we have not yet achieved perfection and that we can always be better. We understand that our clients know far more about their schools than we ever will, and improving education will require learning from them. As individuals and as a company, our success will depend on asking for help and seeking out the brightest thinkers as advisors. We will never let ego get in the way.

6. Are friends with everyone on the team

We love our work, and we love our team. As we grow, we don’t want to be a company where people are only connected as “co-workers.” We choose to be friends with each other, at the office and outside of work. We care about each other, we have fun together, and we spend time getting to know one another. In the hiring process, we refuse to compromise on this value. (An important caveat: we want to create a diverse team, and recognize that this value, if applied incorrectly, could lead to a homogenous company. To that end, we maintain an open mind about who we would embrace as friends, and we recognize the value in forming friendships with people who are different from our other friends.)

7. Provide equal and equitable access for all schools

We are angered and saddened by the inequities in our country’s education system.
Many schools receive too little funding to meet their students’ needs. We aspire to serve every student in the country, and we never want a school’s lack of funding to prevent its students from benefiting from our work. At the same time, we know that our impact will be greatest if we build a sustainable business. So, as we grow, we are consciously frugal and efficient in everything we do so we can keep our prices low for the schools we serve.

8. Contribute to our communities

In addition to our clients, we serve our communities more broadly, including the Boston community, the education community, and the startup community. Whenever possible, we contribute, and we give back. We release open source materials and share best practices. We help others who are doing important work.

9. Practice goodness

We are a company with a strong moral compass, and we act with “goodness” at the individual level and the company level. Goodness means treating others with kindness, working late to pick up someone’s workload during a family emergency, and sending a thoughtful note to a client in a time of crisis. Goodness means being honest with a client when we make a mistake, not because it’s good client services but because it’s the right thing to do. Goodness means recognizing that how we act is as important as what we accomplish.

10. Focus on Impact

We can be a company focused on surveys and analytics, or we can be a company focused on making schools better. We choose to be the latter. Our current products and tools represent what we think is our best contribution toward our mission, and we’re always focused on the ends, rather than married to a particular set of means. That helps us stay nimble and adapt, and it helps us making the biggest difference in education.
Appendix B

Open-Ended Interview Script

Opening:

The aim of this interview is to get a feeling for what makes feedback useful feedback from your perspective.

Questions:

1) When you think about useful feedback, what makes it most useful?

2) What takes away from the usefulness of feedback?

Prompt:

For the purpose of the remaining questions, I would like you to think specifically about feedback in the form reports, as opposed to the in-person feedback you might receive from a principal or a peer after an observation. Feedback in the form of reports might range from all text to mostly graphical, these reports might be provided to you in printed form, as a digital file or as information hosted online.

Questions:

1) What makes a report useful?
   a. What specific features can you describe of a useful report?

2) Think about a time you recently received a useful report. What do you remember about it?

3) What makes a report un-useful?
   a. What specific features can you describe of an un-useful report?

4) Think about a time you recently received an un-useful report. What do you remember about it?

5) For a report that is specifically giving you information about or from your students, what would make it a useful report?
6) If a report were to provide you with *survey information* from students, what would make it a useful report?

7) How much would you like to be able to draw your own conclusions from the data versus being told what others think are the most important things for you to know about your data?

8) If you were in charge of designing these types of reports for your school, what are the 3 features of them that would be most important? In other words, what qualities would you want to be most sure that these feedback reports had?

9) Is there anything else that you think is important for me to know to help me understand what makes reports better or worse for teachers?
## Appendix C

<table>
<thead>
<tr>
<th>Name</th>
<th>Amy</th>
<th>Rachel</th>
<th>Alexandria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview #</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>What makes feedback or reports useful?</td>
<td>applicable to practice</td>
<td>a cookie sandwich: good-bad-good</td>
<td>applicable to practice</td>
</tr>
<tr>
<td></td>
<td>suggestions for next steps</td>
<td>provide clear next steps</td>
<td>suggestions for next steps</td>
</tr>
<tr>
<td></td>
<td>familiar - my setting</td>
<td>familiar - personalized</td>
<td>clear</td>
</tr>
<tr>
<td></td>
<td>Included resources</td>
<td>concise data</td>
<td>concise</td>
</tr>
<tr>
<td></td>
<td>Exposure to research or practices outside</td>
<td>prompting my own thinking or analysis</td>
<td>affirmation with criticisms</td>
</tr>
<tr>
<td></td>
<td>Begins with positive</td>
<td>well-organized</td>
<td>well-organized</td>
</tr>
<tr>
<td></td>
<td>Sites evidence</td>
<td>Personalized to me</td>
<td>Personalized to me</td>
</tr>
<tr>
<td>What makes feedback or reports less useful?</td>
<td>too much information</td>
<td>too much information</td>
<td>No follow up</td>
</tr>
<tr>
<td></td>
<td>Focused on the negative</td>
<td>all positive, nothing critical</td>
<td>Varying feedback with no focus</td>
</tr>
<tr>
<td></td>
<td>Unrealistic goals</td>
<td>addressing what I can do next</td>
<td>consistent focus over time</td>
</tr>
<tr>
<td>Your own conclusions vs done for you?</td>
<td>a mix of both</td>
<td>don’t tell me how to teach, tell me how to enhance my teaching</td>
<td>Both</td>
</tr>
<tr>
<td>Top three features you would include in reports?</td>
<td>Positive focus</td>
<td>personalized</td>
<td>action steps</td>
</tr>
<tr>
<td></td>
<td>Complete data</td>
<td>concise</td>
<td>a scheduled loop-back</td>
</tr>
<tr>
<td></td>
<td>Supportive resources</td>
<td>a structure that creates a dialogue that I</td>
<td>reflection on past data and progress</td>
</tr>
<tr>
<td>Anything else?</td>
<td>There can be a cultural challenge in making feedback good.</td>
<td>Restress the importance of dialogue</td>
<td>an opportunity to self-rate</td>
</tr>
<tr>
<td></td>
<td>Consistent protocols are important</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expectation setting matters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Mandy</td>
<td>Nashua</td>
<td>Carolyn</td>
</tr>
<tr>
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<td>-------------</td>
</tr>
<tr>
<td>Interview #</td>
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<td>5</td>
<td>6</td>
</tr>
<tr>
<td><strong>What makes feedback or reports useful?</strong></td>
<td>applicable to practice</td>
<td>suggestions for next steps</td>
<td>starts with positive</td>
</tr>
<tr>
<td></td>
<td>suggestions for next steps</td>
<td>familiarity</td>
<td>resources for next steps</td>
</tr>
<tr>
<td></td>
<td>specific</td>
<td>applicable to practice</td>
<td>student-centered</td>
</tr>
<tr>
<td></td>
<td>seeing Δ over time</td>
<td>positive feedback</td>
<td>developmental stance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>well-organized</td>
<td>familiarity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>specific</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Δ over time</td>
</tr>
<tr>
<td><strong>What makes feedback or reports less useful?</strong></td>
<td>feedback from someone w/ limited No action steps</td>
<td>not citing evidence no action steps</td>
<td>From an source unfamiliar with my work no follow up over-simplified</td>
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<tr>
<td>Your own conclusions vs done for you?</td>
<td>My own with guidance</td>
<td>done for me</td>
<td>If we are given time, my own.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If we are not given time, done for me.</td>
<td></td>
</tr>
<tr>
<td>Top three features you would include in reports?</td>
<td>Focus on growth</td>
<td>groups and subgroups</td>
<td>cited evidence</td>
</tr>
<tr>
<td></td>
<td>consistent follow up</td>
<td>visual representations</td>
<td>data disaggregated</td>
</tr>
<tr>
<td></td>
<td>goal setting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anything else?</td>
<td>Feedback is much easier when it isn't high-stakes</td>
<td>I don't receive enough feedback</td>
<td>watching videos of your own practice is powerful feedback</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I would love to see what other teachers are doing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>I would like to compare my school and class to others with similar demographics</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Maxine</td>
<td>Naggai</td>
<td>Lydia</td>
</tr>
<tr>
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</tr>
<tr>
<td>Interview #</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

### What makes feedback or reports useful?
- **familiarity**
- **logically arranged**
- **clear**
- **discussion**
- **specific**
- **balance positive with critical**
- **longitudinal data**
- **seeing my growth**
- **"Aha" moments**
- **applicable to practice**
- **timely**
- **suggestions for next steps**
- **neutral language**
- **subgroup breakdowns**
- **inter-report comparisons**
- **student-level data**
- **color-coded**
- **highlight positive**
- **progress update emails**

### What makes feedback or reports less useful?
- **too general**
- **no suggestion of what I**
- **lacks explanation**
- **lacked critical feedback**
- **feedback came from a source unfamiliar with teaching**
- **only positive**
- **doesn’t cite evidence**
- **untimely**
- **too general**
- **repetitive**
- **inability to identify specific students**

### Your own conclusions vs done for you?
- **done for me**
- **both**

### Top three features you would include in reports?
- **commendations**
- **recommendations**
- **goal setting**
- **evidence-based**
- **balance of + and delta**
- **student engagement**
- **mastery**
- **behavior management**
- **organized by objective**
- **comparison groups**
- **Balance of + and delta**

### Anything else?
<table>
<thead>
<tr>
<th>Name</th>
<th>Caitlin</th>
<th>Amanda</th>
<th>Lauren</th>
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<tbody>
<tr>
<td>Interview #</td>
<td>11</td>
<td>12</td>
<td>13</td>
</tr>
</tbody>
</table>

**What makes feedback or reports useful?**
- timely
- discussion
- logically arranged
- concise
- graphs
- suggestions for next steps

- highlight positive
- specific
- critical
- suggestions for next steps
- longitudinal data
- ability to track growth

- clear
- realistic
- suggestions for next steps
- applicable to practice
- multiple data points
- visuals
- graphs
- simple
- logically arranged
- practitioner knows best

**What makes feedback or reports less useful?**
- difficult to use
- too long

- infrequency
- lack of rigor in feedback

- prescriptive
- not thorough

**Your own conclusions vs done for you?**
- my own analysis

- Both

- Both

**Top three features you would include in reports?**
- visually appealing
- logically organized
- suggestions for next steps

- suggestions for next steps
- longitudinal data
- highlight positives

- Work teams
- Visually appealing
- resource bank

**Anything else?**
- timely

- stay connected with teachers
- familiarity

- Sharing with parents who don’t speak English is a real challenge in my school
- A quick way for me to share with parents would be great.
<table>
<thead>
<tr>
<th>Name</th>
<th>Cary</th>
<th>Colleen 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview #</td>
<td>14</td>
<td>15</td>
</tr>
</tbody>
</table>

**What makes feedback or reports useful?**
- timely
- bite-sized
- applicable to practice
- numerical
- leads to teacher actions
- charts
- “Aha” moments
- trends and specifics
- comparison groups
- results by question and standard

**What makes feedback or reports less useful?**
- too general
- hard to implement
- uninformed
- generic
- not relevant to my students
- lacks familiarity

**Your own conclusions vs done for you?**
- Both

**Top three features you would include in reports?**
- arrangement of multiple data
- was the skill addressed in class?
- preparation for reports

**Anything else?**
- teachers are capable, don’t dumb it down
Appendix D

USER GUIDE

PANORAMA STUDENT SURVEY

PANORAMA EDUCATION

DR. HUNTER GEHIBACH

HARVARD GRADUATE SCHOOL OF EDUCATION

This work was adapted from work developed at Harvard University by Dr. Hunter Gehibach and his research team at the Harvard Graduate School of Education
Dear colleagues,

Last year, researchers at the Harvard Graduate School of Education and Panorama Education launched a first-of-its-kind collaboration to develop a valid and reliable survey tool to measure student perceptions of teaching and learning.

Our goal was to develop a survey instrument that would be grounded in the most advanced survey methodology and practice. From the outset, we committed to making all of our work available as a free and open source resource for educators across the world.

We are proud to share with you the product of our collaboration: the Panorama Student Survey, version 1.0. This feedback instrument provides teachers and principals with valuable and actionable data about how students see their classes.

We have designed the survey as a series of scales, or questions related to a single construct, so that educators may customize the survey by selecting the constructs they value most, without compromising the integrity of the survey. As described on the following pages, we have rigorously developed and validated this survey, and our teams are committed to continuing to refine the survey for years to come.

We hope you find this tool valuable for your classroom, your school, your district, or your state. If you have any questions or suggestions, please don't hesitate to contact us at survey_team@panoramaed.com. We welcome your feedback.

Sincerely,

Dr. Hunter Gehlbach
Associate Professor
Harvard Graduate School of Education
hunter.gehlbach@gse.harvard.edu

Aaron Feuer
CEO
Panorama Education
afeuer@panoramaed.com
ABOUT THE SURVEY

The Panorama Student Survey gathers feedback from students about their experience in the classroom. Developed by researchers at the Harvard Graduate School of Education and Panorama Education, this survey was created as a formative tool for educators. School systems may also choose to incorporate the survey into educator evaluation systems.

Here’s what you need to know:

1) The instrument was developed and validated in line with modern survey design best practices.

The survey was developed under the leadership of Dr. Hunter Gehlbach, Associate Professor at the Harvard Graduate School of Education, a leading survey methodologist and education researcher, and a former high school social studies teacher. Dr. Gehlbach and his team followed a rigorous survey development process that involved literature reviews, feedback from experts around the country, cognitive interviews with students, and multiple rounds of piloting and refinement — for more information, please find a full description of the development and validation process on the following pages.

The Panorama Student Survey looks slightly different than many school surveys that are administered today. That’s because Dr. Gehlbach and his team developed the instrument in line with today’s best practices for survey design. For example, unlike many education surveys, each item on the Panorama Student Survey is worded as a question, rather than a statement, in line with overwhelming research showing that students’ feedback is more valid when items are worded as questions rather than statements. For an explanation of some of the survey design best practices that went into the making of the Panorama Student Survey, please visit www.panoramaed.com/checklist.

2) The survey is customizable.

Education is not “one size fits all”, and long surveys don’t collect valid data. We designed this survey as a library of scales, or groups of questions that come together to measure a single construct. We encourage educators to customize the survey by picking and choosing the constructs that they feel matter most in their context.
3) The survey is completely free and open source

We believe that all educators deserve the best tools available. We’ve committed to making the Panorama Student Survey free and open source. What does that mean?

The survey is “free” in that we invite educators everywhere to use the survey at no cost. We only ask that you identify the survey as the “Panorama Student Survey”, so that others may find it as well.

By making the survey “open source”, we’re encouraging everyone to customize the survey and help make it better. This is a collaborative endeavor. Our only request is that you share your improvements back with our research team so we can consider incorporating them into future versions of the survey. (Contact us via survey_team@panoramaed.com).

4) The survey can be administered at the classroom level or the school level

We believe the Panorama Student Survey can be a powerful tool for teachers to collect feedback from their students. However, school systems may also choose to administer the survey at the school level.

ABOUT PANORAMA EDUCATION

Panorama Education partners with school districts and state departments of education to design and implement survey programs for students, parents, and teachers. Panorama offers a technology platform to support survey administration and create reports that are clear, actionable, and, most importantly, help teachers and administrators improve their schools. Panorama’s client services team helps districts and states implement survey programs in line with best practices. Panorama currently runs survey programs online and on paper in over 5,000 schools across 31 states, with clients including the Los Angeles Unified School District, the Connecticut State Department of Education, Achievement First, and Teach for America.
WHAT IT MEASURES

The Panorama Student Survey consists of a library of scales, or groups of questions that measure a single construct. Educators may customize the survey by selecting the combination of scales that they believe are most important in a particular context.

Classroom-level Scales

The following scales measure student perceptions of teaching and learning in a particular class. (Surveys containing these scales may also be administered at the school level for an overall view of teaching and learning.)

Pedagogical Effectiveness

This scale measures students' perceptions of a teacher's instructional methods and delivery of content.

Example Question: How clearly does this teacher present the information that you need to learn?

Classroom Environment

This scale measures students' perceptions of the overall classroom climate including the classroom's physical, social and psychological environment.

Example Question: How often do students behave well in this class?

Expectations and Rigor

This scale measures students' perceptions of the extent to which their teacher holds them to high expectations around their effort, understanding, persistence, and performance in their class.

Example Question: How much does this teacher encourage you to do your best?

Student Engagement

This scale measures students' perceptions of their attention to and investment in what goes on in the classroom.

Example Question: In this class, how much do you participate?

Supportive Relationships

This scale measures students' perceptions of a teacher's care and support for their personal development and well-being beyond the classroom.

Example Question: How interested is this teacher in what you do outside of class?
Supplemental Scales

In the process of developing the Panorama Student Survey, we heard feedback from educators requesting additional scales that would provide school-level and student-level context to survey data about teaching and learning. In particular, educators expressed interest in feedback around students' sense of belonging at school, student interest in the subject matter, social emotional skills / soft skills such as grit, and student's abilities to use learning strategies in the classroom.

We encourage educators to consider including the following four scales in their survey programs:

Sense of Belonging
This scale measures the extent to which students feel that they are valued members of their school's community.

*Example Question:* How connected do you feel to the adults at your school?

Interest in Subject
This scale measures how interesting, important, and useful a student considers a specific subject.

*Example Question:* How often do you use ideas from [SUBJECT] class in your daily life?

Grit
This scale measures a student's ability to persevere through setbacks to achieve important long-term goals.

*Example Question:* If you fail to reach an important goal, how likely are you to try again?

Learning Strategies
This scale measures the extent to which students deliberately use strategies to actively manage their own learning process.

*Example Question:* Before you start working on your schoolwork, how often do you think about the best way to approach the work?
SURVEY DEVELOPMENT & VALIDATION PROCESS

Educators using the Panorama Student Survey can be particularly confident that the set of measures in the Panorama Student Survey will yield high quality data because of the rigorous design process that was used to develop them.

In the first phase of the project, the research team led by Professor Gehlbach conducted an extensive literature review and interviewed dozens of students to get both academic and applied perspectives on which aspects of students’ experiences were most important to include in the survey. After synthesizing the input from these two perspectives, the research team developed survey questions with strict attention to the scientific best practices in designing survey items. After developing the items, the research team then contacted dozens of academic experts to get their feedback on those items within their area of specialty.

Next, using cognitive interviews (also called “think alouds”) with students, the research team ensured that students understood each and every question in the way that was intended. Finally, the research team and Panorama piloted these measures in schools across the country including in a large scale pilot partnership with the North Carolina Department of Public Instruction, adjusting the survey after each administration in response to feedback from participants and data gathered.

For those interested in a more technical discussion of Professor Gehlbach's process, please see his 2011 paper (with Dr. Maureen Brinkworth), Measure twice, Cut Down Error: A process for enhancing the validity of survey scales, for more information on the methodology.

ABOUT DR. HUNTER GEHLBACH

Hunter Gehlbach is Associate Professor of Education at the Harvard Graduate School of Education. He is an educational psychologist with an academic focus in helping social scientists and practitioners design better surveys and questionnaires. He is particularly interested in helping schools think about ways to use surveys to improve teacher and student outcomes and teaches classes in each of these areas at Harvard. After graduating with a B.A. from Swarthmore College in psychology and education, Gehlbach taught high school social studies before returning to school for a M.Ed. in school counseling from the University of Massachusetts-Amherst and a Ph.D. in educational psychology from Stanford.
Appendix E

“Sherlock” Planning Presentation

July 22, 2014

Next steps

• Customer feedback plan
  – Talk to 3 clients
  – Success = Enthusiastic response from 2
  – Also get design feedback
    • Number of results?
    • What is most interesting to principals?
• Talk to Aaron and plan the Building phase
Appendix F

Panorama for Teachers Project Update #1

Brian Rainville <brainville@panoramaed.com>
to bcc: Anne

Hello Content Generation Team!

Thank you for the excellent effort that you made this week! It is really exciting to see the first wave of content come in and to know that we are taking the first steps towards building the Panorama for Teachers platform.

The distribution of moves across topics in the first week was relatively flat, so feel free to continue to follow your inspiration in week two. A few of you submitted multiple research references and checked in during the week with ideas and critical questions – thank you!

1) One of those critical questions asked how the team would avoid the creation of duplicate moves. To help us manage this, I have created a Google document that captures the title and summary of every move created so far. (Your access to that document will come as a separate email sent to your Gmail account.) From this point on, I will update this document in real time as I receive moves from the team. Please check this document before you create more moves to help us avoid duplication.

2) Attached to this email is a word document that contains the moves you have been asked to review for the week. As a reminder, please capture your edits by inserting comments. Once you are done, save and rename the edited version and send it to me as an email attachment. Including the reviewed version in your Sunday email is fine.

When you review a move, please answer the following questions:

1) Are there any grammar/spelling mistakes?
2) As a teacher, would I know what to do in my classroom given the provided description?
3) Do I feel excited to try this?
4) Is this move placed in the appropriate primary topic? If not, which topic would be best.

3) Upon a quick first glance, I think one area for improvement is labeling moves with the best-fit topic. For help with this, please refer to the “Panorama Student Survey - User Guide” document attached to the initial kickoff email. In the User Guide you can read descriptions of topics and look at individual questions to get a feel for the right topic to put your move into.

I hope this email is helpful. If you have any feedback or need any support, please don't hesitate to reach out. I am grateful for the good work that you have all already begun to do!

All the best,

Brian

P.S. – I am still recruiting a team member who has taught upper elementary/middle school. If you know anyone that you believe would do a wonderful job with this project, please let me know!
Hello Content Generation Team!

Happy Saturday! I hope that each of you is beginning an enjoyable weekend. Multiple members of the team submitted their moves early this week – thank you for making the effort to keep us ahead of the ball! The Google spreadsheet that I shared with you last week is updated to reflect our current roster of moves.

Please re-familiarize yourself with the moves that the team has already created before you start creating new moves. As anticipated, we have had some repeats. We will want to manage for and minimize repeats as much as possible as we move forward.

A few members of the team also asked about reviewing moves this week. When reviewing, please capture all of your edits in comments to the word document - this includes corrections to grammar/spelling/etc. Otherwise, if you feel that everything is good to go, you can ignore a question. If you feel that one of the guiding questions is problematic and needs to be addressed, please address this explicitly in the comments.

I will send the next update on Monday, which will include the feedback on your first round of moves and the next round of moves for you to review. In the meantime if I can be of support or if you have any insight into improving our processes or work, please don’t hesitate to reach out!

All the best,
Happy Monday Content Generation Team!

I hope that each of you had a wonderful weekend and that your week got off to a great start today! My week began with an energizing ride into work - 38 degrees and steady rain! 😊

I remain impressed by the effort that each of you is making! Not controlling for repeats, we are presently at 129 total moves – an average of 25 per topic! Our final team member also joins us this week and will be working at an accelerated pace while the rest of the team downshifts to 10 moves/week. Many of you have submitted materials early, given critical feedback to the process and/or submitted additional materials beyond the targets – thank you! I am grateful for your effort and excited to make your work matter for teachers!

Attached to this email you will find your reviewed moves. Please walk the feedback and make what changes are needed before re-submitting these moves. Keeping the feedback in mind may also help you as you begin work on the next round of moves.

You will also find attached to this email a set of moves to review this week, from a different team member. As I mentioned earlier, please capture your thoughts in the document as comments. If you want to answer the 4 questions directly, feel free. Otherwise, please be sure to make it explicit when you feel one of the questions is not met. If you have any feedback that you feel does not fit into the 4 questions, please provide it. One way to capture this feedback may be to add a comment for general feedback at the beginning or end of the document.

We are now at the point where we will need to begin to focus our efforts to maintain balance across topics. Right now the moves break down as follows:

- Pedagogical Effectiveness - 21
- Classroom Environment - 27
- Expectations and Rigor - 21
- Student Engagement - 17
- Supportive Relationship - 33

To create balance this week, please create at least 3 moves focused on Student Engagement and at least 3 moves focused on Expectations and Rigor. (The remaining 4 moves are fine to compare as your inspiration leads you.) It is to be clear, the 3 moves each focused on Student Engagement and Expectations and Rigor should not be overlapping.

It may be helpful to re-familiarize yourself with the definitions of these topics and the survey questions that are asked to measure them.

I want to take the time to address two more questions from the weekend:

Q: “Is seeking out a common voice for the moves? Or, are we ok with different styles and approaches?”

A: “We are definitely not seeking a common voice. We want each member of the content generation team to write a move as it has worked for you and, through the move, to support teachers in the ways that others have effectively supported you. (Of course, we still want to have a generally encouraging tone and we want to use proper grammar and spelling.)

Q: “We may still need some clarification moving forward about how specific our moves are to particular grade levels or courses, and in writing up the move if we should invest some effort into figuring out how to extend the ideas we use in a way that would be more universally applicable.”

A: “My best thinking here is that if a move can be generalized to serve more teachers but not love any of it’s power, generalization is ideal. If a move is undermined by an attempt to generalize it, generalization should be avoided. For example, we have a move in Expectations and Rigor called “One Sentence Label” that is designated as high school and science. The move is concise and engaging. I would love to go back in the classroom to try it - if I taught older kids and science. Generalizing this move for my 3rd graders would dilute the move and probably not help my direction/approaching 8 year olds.

Finally, before I sign off, I want to close with two points of feedback:

- Please aim for bite-sized moves - things that a teacher could turn around and try the same day.
- Please do a quick skim of the adopted user guide. The user guide describes each topic and also provides the questions used to assess those topics. This can be helpful with assigning moves to topics and identifying new moves.

As always, if I can be of any support, please don’t hesitate to reach out.

All the best,

Brian
Hello Content Generation Team,

Happy nearly Thanksgiving! 😄 I am excited to report that we have met our target of 50 moves in our first topic! Student Engagement is at the goal! While 50 is just the starting point and we will hope to see many more moves added when the Panorama for Teacher is being actively used, it is worth celebrating! Thank you for all of your hard work!

Our current totals across the remaining topics are:
- Pedagogical Effectiveness: 36
- Classroom Environment: 37
- Expectations & Rigor: 42
- Supportive Relationships: 34

This week’s distributions will be personalized down to the person, so look for them in the final section of this email.

I – Sharing contact information

Feel free to connect with each other at will – every member of the team agreed I share their contact information!

Anne Claire
Samantha
James
Amanda
Megan

II – Heading for a new name

I was able to speak with a few of you on the phone about new possible names. For those of you that I haven’t connected with, I would love to hear your brief thoughts on which of these five names we should use and why.

1. Panorama for Teachers
2. Panorama Resources
3. Panorama Resources for Teachers
4. Panorama Playbook
5. Panorama Resource Engine
6. Other

III – Recruiting

In the next week or so, I will be sending you a recruiting package to share with your favorite teacher-friends. We are going to be offering a $100 Amazon gift card in exchange for 5 solid moves, a bio and a media-ready headshot. 😄

Our aim: to broaden the pool of teachers who have contributed to Panorama for Teachers so that the platform is seeded with a greater diversity of teaching and personal backgrounds and perspectives than any five teachers can bring.

IV – Getting even more specific

For the next (and for most of you final) round of move creation, I ask you to dig into the questions that are used to target each topic. Try to make each of your moves tailored to one specific question. If you wanted to make progress on that specific question, what would your move be? To be clear, I am not saying that each of your moves should target a single topic this week. I am saying that each of your moves submit should specifically target one question within the topic.

V – Adjusting the review process

This week we added our 5th team member, Megan Jacobson. In doing so, we moved to an odd number of team members. Hence, the peer-review process will no longer be done in matched-partner sets. In other words, the person whose moves you review will not be the person reviewing your moves.

As usual, your moves for review this week are attached to this email.

New this week, you can email the other team member directly if you want to spark up a dialogue!

VI – Personal Feedback and move distribution

Hey Sam!

This week I am asking you to create the following # of moves:
- Pedagogical Effectiveness: 3
- Classroom Environment: 3
- Expectations & Rigor: 1
- Supportive Relationships: 3

I know that you said the group feedback and peer-review process is working fine with you so I will save both of us some time by not going any further! Thank you for making the most of this opportunity! Enjoy Florida!

(Peer-reviewed moves from last week attached. Your moves this week come from Megan.)

All the best,

Brian
Hello Content Generation Team!

I hope that this email finds each of you returning from a joyful and rejuvenating break. Things are moving along nicely! As always, I am grateful for your hard work! With four of our team members done completing initial content, our totals sit at:

- Pedagogical Effectiveness: 50
- Classroom Environment: 48
- Expectations & Rigor: 48
- Student Engagement: 52
- Supportive Relationships: 48

Megan, who joined late, has one final round of moves to create, which will push us past our goal of 60 for every topic! 😊

I - Email attachments

Please watch out for email attachments. A few attachments that I included on past emails were missed - mostly due to me not making it clear enough what/when I had attached. (Sorry!) I am committed to better messaging about attachments and I ask that you do a quick scan of emails that I send for attachments. Thank you!

To this end, attached to this email you will find your moves for review this week. 😊

II - Sharing edited moves

Several of you asked if you should email your suggestions/edits directly to the other team member. Yes! Please email the appropriate team member and CC me on that email. Email addresses are below.

Anne Claire
Samantha
James
Amanda
Megan

III - Our name

After hearing from the team and polling internally, we have landed on a new name for "Panorama for Teachers" - Panorama Playbook! The voting wasn’t unanimous, but it was a landslide. Thank you for taking the time to provide us with feedback.

IV - Recruiting

A one-pager and email template will be coming your way later this week! (We are in draft form for both right now.)

V - Sharing revised moves

Please remember to send me your revised moves. You should receive edits each week from another member of the team. Please walk those edits and revise what you agree with. Where you choose to not revise, please add a comment capturing why you chose to keep the original version. These edited versions of the moves are what we will be loading onto the actual platform! 😊

VI - Personal Feedback

Hey Amanda, thank you for all of your hard work in this process. I would love to schedule a debrief call with you after you wrap up! Thank you for the amazing turnaround on revisions earlier today!

All the best.
Appendix G

From: Brian Rainville <brainville@panoramaed.com>
Date: Fri, Dec 26, 2014 at 10:29 AM
Subject: Playbook alpha testing
To: team <team@panoramaed.com>

Hello Team,

Happy holidays! I hope each of you is enjoying your break!

The Playbook team has been hard at work and we are excited to engage the entire team in an alpha user test to gather your feedback and insight. We want to be sure that Panorama Playbook provides real value to teachers and school system decision makers. In order to make this happen, we need your help.

We have split the entire Panorama team into diverse groups with each group focusing on one of the five initial Playbook topics. (These are the same five classroom-level topics from the Panorama Student Survey.)

By clicking your assigned link at the end of this email, you will be taken to a demo report that has the entrance door into Playbook embedded.

Take a moment. Clear your head. Imagine yourself as a teacher. Imagine the demo report as your report. For the next 10-15 minutes we want you to live the Playbook experience, beginning with the Playbook “entrance door” in your report to selecting a move.

As guidance, I have outlined the following questions for you to consider. You don’t have to answer each of these directly, but please use them as a guide to direct the feedback that you will capture in this Google doc.

1 - What are the first five minutes like?

   **Intuitiveness** - Do you understand where you are going and what for?

   a) When you take the entrance door out of your demo reports, do you understand where you are going and what for?
   b) When you land in Playbook, do you understand where you are and what for?
   c) When you land on Playbook, do you know what to do next?

   **Interest**

   a) Are you excited?

2 - What are ten minutes on Playbook like?

   **Usefulness** –
a) In ten minutes time could you find a piece of content that you were excited to use?
b) Does Playbook feel useful?
c) Would you come back?

3 – Did you experience any bugs?

4 – Do you have any feature ideas?

5 – Any other feedback?

6 – Move feedback? (Please don’t spend your time doing a line-edit of the moves. For this feedback, we are much more interested in your answers to questions 1-5. Still, if anything about a particular move strikes you as needing attention, capture it here.)

Additional Details:

- Please complete your alpha user test by COB Monday, January 5th.

- We only want you to spend 10-15 minutes on the platform and no more than another 10-15 minutes capturing your feedback. Remember, you are the teacher and our goal is for you to find content that you find empowering and exciting.

- We recognize that it would be impossible for you to completely turn off your Panorama brains, so please don’t hesitate to share feedback from that perspective should it arise.

- Not every feature that Playbook will eventually have is built yet, but please give us feedback as though this were the final product.

Ok! Time to jump in – your links are below! We look forward to learning from each of you and building Playbook into something that makes a difference for teachers and students.

Thank you for your help!

All the best,

Brian

Classroom Environment: Byron, Jacob, Jess, Won, Sarah

https://analytics.panoramaed.com/panorama_demo/reports/15182/interactive#/questions/topics/7 58

Expectations and Rigor: David, Megan, Susie, Sagar, Brian

https://analytics.panoramaed.com/panorama_demo/reports/15182/interactive#/questions/topics/7 59
**Pedagogical Effectiveness:** Irene, Mike, Kevin, Xan, Stephen

https://analytics.panoramaed.com/panorama_demo/reports/15182/interactive#/questions/topics/757

**Student Engagement:** Elizabeth, Jason, John, Hunter, Geoffrey

https://analytics.panoramaed.com/panorama_demo/reports/15182/interactive#/questions/topics/760

**Supportive Relationships:** Jack, Aaron, Jenn, Rahika, Liz

https://analytics.panoramaed.com/panorama_demo/reports/15182/interactive#/questions/topics/761
**Appendix H**

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<td>Some Other</td>
<td>Im not sure that a teacher would be highly engaged by the topic using a different task, which could lead to distractions. It might be beneficial for teachers to have a more structured approach to the topic and to practice their teaching skills.</td>
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<td>Sense of Place</td>
<td>Some students found the content engaging, but others found it confusing.</td>
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<td>I found the text to be compelling and thought-provoking, and found that the ideas were quite thought-provoking and engaging.</td>
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</tbody>
</table>

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1. I think the feedback from teachers was excellent in the description of the text. It's important to recognize how teachers receive feedback and how it is felt. Teachers need to be prepared to receive feedback that may be critical, but at the same time supportive. The feedback should be constructive and focused on the text, rather than on the individual. The feedback should be clear and specific, rather than vague and general. However, I think the feedback from teachers was excellent in the description of the text. It's important to recognize how teachers receive feedback and how it is felt. Teachers need to be prepared to receive feedback that may be critical, but at the same time supportive. The feedback should be constructive and focused on the text, rather than on the individual. The feedback should be clear and specific, rather than vague and general. However, I think the feedback from teachers was excellent in the description of the text. It's important to recognize how teachers receive feedback and how it is felt. Teachers need to be prepared to receive feedback that may be critical, but at the same time supportive. The feedback should be constructive and focused on the text, rather than on the individual. The feedback should be clear and specific, rather than vague and general. However, I think the feedback from teachers was excellent in the description of the text. It's important to recognize how teachers receive feedback and how it is felt. Teachers need to be prepared to receive feedback that may be critical, but at the same time supportive.
<table>
<thead>
<tr>
<th>Name</th>
<th>Did you ever?</th>
<th>How much did you enjoy this?</th>
<th>Other Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jack Mohammed</td>
<td>Yes</td>
<td>A lot</td>
<td></td>
</tr>
<tr>
<td>John Smith</td>
<td>No</td>
<td>A little</td>
<td></td>
</tr>
<tr>
<td>Lisa Brown</td>
<td>Yes</td>
<td>A lot</td>
<td></td>
</tr>
<tr>
<td>Robert Johnson</td>
<td>Yes</td>
<td>A lot</td>
<td></td>
</tr>
</tbody>
</table>

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**Feedback Table**

<table>
<thead>
<tr>
<th>Name</th>
<th>Found It Useful?</th>
<th>New Ideas?</th>
<th>Engaging?</th>
<th>Did You Ever?</th>
<th>How Much Did You Enjoy This?</th>
<th>Other Feedback</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Yes</td>
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<td>Yes</td>
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</tr>
</tbody>
</table>

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**Diagrams**

Diagram 1: Diagram 1 content...

Diagram 2: Diagram 2 content...

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**Notes**

- Some notes about the content that need to be mentioned...
- Additional comments for the feedback...
- Any other important information...

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