

Listening to Stories Students Tell
About the Impact of Personalized Learning
on their Learning and Lives

By

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Abstract

Personalized learning is a term that has been used to describe an array of practices, technologies and school structures without a commonly held definition of what personalized learning schooling entails. What literature that does exist describes a set of practices that are common across the personalized learning space. Little is known about the effects of schooling that embraces these characteristics on the students, either from the perspective of external measures such as state mandated testing, from school system designers and those who work in the schools, and perhaps most importantly, from the perspective of the students. This paper seeks to address the gap in literature by both working toward a definition of personalized learning as it is represented in the literature and by learning about the impact of personalized learning on students who are enrolled in schools describing themselves as personalized learning environments. Through a qualitative study of student stories that center on (1) student experience making choices about their learning, (2) the extent to which student interest influences those experiences, (3) whether and how their learning expectations are socially embedded, and (4) how their high school experiences have shaped their post high school plans I will be able to describe personalized learning in these two schools and how this system of schooling has had an impact on the students who participated in the study. The study is comprised of analyses of interviews of students in three schools; one comprehensive, traditional high school and two self-described personalized learning schools, all situated in or near population centers in a midwestern state. This study shows that there is a definition of personalized learning schools that can be defined by a set of liberal education features and characteristics. It also demonstrates that there is a differential impact on learning between

traditional and personalized learning, and that students in personalized learning schools have more access to, practice with, and mastery of 21st century skills.

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Chapter One: Introduction

The progression from childhood to becoming an adult follows a predictable path. As we move through the years of our compulsory education, we are exposed to increasingly complex ideas and thinking, and the expectation is that graduates from high school are prepared to engage in independent, self-motivated and productive lives. However, the nature of typical schooling systems may serve to actively repress agency, interest, and decision-making for young people, thereby stunting the development of skills critical to successful participation in the adult world. A growing number of schools seek to disrupt this typical system. Personalized learning schools aim to shift the balance of agency and responsibility toward students and away from adults; they redefine the roles of participants such that young people are more likely to attain what are described as “21st Century Skills” and are better prepared for their lives after compulsory schooling.

Personalized Learning (PL) has become ubiquitous in education reform efforts. To be sure, schooling that purports a student-centered focus is not new. Montessori schools, for example, have included the development of student decision-making leading to intrinsic motivation as part of their design (Rathunde & Csikszentmihalyi, 2005). Now, schools which embrace PL build on these inherited practices and include features and systems described in more detail below which gradually shift the decision-making responsibility to students as they progress through schooling and learn how to take charge, or gain agency, in their learning lives. The process of making decisions has been shown to increase intrinsic motivation and productivity (Meng & Ma, 2015), both of which are undeniably important in schools. Unfortunately, there have been limited efforts to assess the impact of a shift in agency on

student outcomes, and there is no real consensus on the specific set of practices or systems of schooling that could best leverage this shift of agency.

The sheer number of practitioners, advocacy groups, foundations, and policy bodies creating schools under the moniker of PL have prevented the development of a concise and commonly held definition of PL, or what features and structures these schools include to make them more personalized than traditional (Zmuda et al., 2015). However, there is a growing body of literature on the practice and implementation of features of schooling considered to be personalized. The next section of this paper examines recent literature on the features of PL, as they are being implemented in schools and as advocated for by reform-minded scholars and practitioners. Writing on PL practices includes specific features and structures, as shown in Table 2.1 below. Taken as a whole, the combination of some of the features creates a culture of learning that is reminiscent of features of non-school related informal learning. To better understand this connection, I also examine literature on informal learning.

Curiously, while the emphasis in the current personalized learning movement is on a student-centered paradigm, less attention has been paid to the experience of the students *as expressed by the students*. The focus of this study is on capturing the voices of students who are nearing completion of their compulsory education to assess the impact of their PL experience on agency. Of particular interest, and the topic of this dissertation, is the comparison between the perspectives of students who are approaching graduation from a more typical, traditional style of schooling with those whose high school experience has been in a personalized learning environment. Data from this study will help educators, school leaders, and policymakers to be

able to more closely draw connections between reform agendas which include infusion of PL structures, pedagogies, and constructs into change targets and student outcomes.

This dissertation documents the experience of students in selected PL schools as contrasted with peers in non-PL schools. Through semi-structured interviews, I examined the nature of their experiences, as well as the extent to which the schools' focus on certain constructs of PL have made a difference for the participants. In conversations with participants I asked these students to talk about and tell stories concerning:

- Their experiences in making choices about what and how they learn (examples of student voice and choice as well as participatory cultures);
- how their interests and needs have been incorporated into their planning and learning (examples of inclusion of student interests);
- how the learning has included the context of the student and school (whether learning is socially embedded); and
- their post high school plans (to be able to gauge their sense of agency).

Through qualitative analysis of these conversations, I examine how the students from both PL and non-PL schools express the impact of schooling on: 1) their own learning, 2) themselves as learners, and 3) how the nature of schooling (i.e. personalized learning or traditional school settings) may help them determine their path after high school. The study includes 14 interviews with students in two PL schools, and six student interviews at a school which does not characterize itself as PL. By comparing the conversations with PL students and students who have learned in more traditional spaces I hoped to be able to tease out the specific impact of PL structures and learning cultures from other influences on student's sense

of agency and future planning. The interviews used the same protocol in both PL and non-PL schools. To analyze the possible differences in the comparison of these two groups of students, I developed a framework drawn from my review of the literature that focuses on characteristics of student agency, student interest, socially embedded learning, and the learning climate of the school.

Questions

My research questions are:

- From the perspective of students, how does personalized learning affect high school student agency?
- In what ways does personalized learning impact students' social experience of learning and post-graduation plans?

Through the study described in the following pages, I will detail how data will be collected and examined to inform these research questions. This qualitative research used guided conversations with high school seniors as the primary source of data, and discourse analysis to draw patterns, meaning, and findings from the interviews. In the following section I examine existing literature pertinent to PL to justify the use of specific aspects or constructs common to many PL designs.

Chapter Two: Literature Review

To better understand the nature, structure and practices of PL schools, I first reviewed literature that describes personalized learning as it is being practiced. Underlying the current conception of PL schools are several principles with strong research bases in learning science and psychology, although the impact of learning in PL schools has seen far less attention from educational researchers. Using policy and advocacy widely cited in contemporary practitioner and trade literature, I describe PL as it is being enacted and planned and make connections between specific features of PL schools and existing research.

The second area of relevant literature is examining informal learning outside of typical schooling. In these informal learning settings, interests guide learning outside of the processes and structures of school to create a culture of learning. Three areas of research on informal learning are particularly germane: communities of practice, affinity spaces, and connected learning. I make the connection between these three areas of informal learning and PL schools, in that the learning climate of PL schools often parallels the principles of informal learning. Below, I provide an overview of PL along with specific features of PL schools, along with literature examining informal learning spaces.

What is Personalized Learning

To be able to understand how differences between PL and non-PL schools, it is useful to first examine what is meant by “schooling”, what features of the system are similar across schools and districts, and constraints inherent in those systems. Later, I will similarly examine what is meant by “personalized learning”, its features, and how those features are intended to address the constraints of non-PL schools. To be able to describe schooling in its most general

form, I draw on literature critical of typical education systems, often couched in education reform efforts.

In general, there are a few features of schooling that are widely accepted and implemented in school systems, and which provide a basis for our conception of “schooling”. Students are arranged into groups based on their age, most classrooms are the same physical size, the day is organized into periods of time during which specific subjects are taught, and teachers are tasked with controlling the learning and behavior of the students assigned to them. We also assume that how well a student is learning can be assessed through a (typically text-based) standardized test (Tye, 1998). These assumptions, about who children and adolescents are, what they need, and what they should learn create these features of schooling and keep them consistent between schools and districts. Because we (adults) believe that children do not have the capacity to provide meaningful input into their educations, decisions about what, where, why, how, and when to learn are made without student involvement (Fielding, 2001).

Typically, schooling involves a group of professional educators deciding on and designing learning experiences for an “average” group of children based on knowledge of and experience in the field of education, on societal pressures and political influence for the inclusion of certain types of learning and content (Brooker & Macdonald, 1999). Students are arranged, grouped and flow through the system based on age, perceived ability, and/or performance on standardized tests (Collins & Halverson, 2009). This system, however, in which student opinions and interests are not taken into account in the planning and development of curriculum, creates a schooling experience which students describe as alienating,

disenfranchising, and anonymous (Mitra & Gross, 2009). If interest is a fundamental requirement for learning, as posited by Jalongo (2007), then the current predominant system of schooling seems out of step.

Personalized Learning schools seek to create a schooling experience in which some of the deep structures of school are fundamentally changed. Making changes to the fundamental system of schooling, the “deep structure of schooling” (teachers controlling the behavior and learning of students arranged by age into rooms closed off from other groups of students) is fraught with constraints; these systemic changes are very difficult to enact and are more likely to fail (Tye, 1987). Adopting a personalized learning model seeks to shift the balance of power and agency toward the student and create classrooms that are open working spaces in which students are allowed to flow between learning tasks, workgroups, and activities based on their interests (Rickabaugh, 2016).

The term Personalized Learning has become popular in K-12 education in recent years, appearing in newspapers¹, trade magazines², school district descriptions³, and major education initiatives such as those from Facebook’s Chan and Mark Zuckerberg and the Bill and Melinda Gates Foundation⁴. However, the definition of personalized learning – what specific practices, pedagogies, methodologies, technologies, and outcome expectations for students – has been expressed in multitudinous ways and is often conflated with “personalized instruction”. Personalized instruction is most often characterized as the use of computers and technology to

¹ Spencer, 2017

² Educational Leadership, March 2017

³ These descriptions abound; see for instance <https://www.kmsd.edu/domain/468>

⁴ <https://www.chanzuckerberg.com/researchanddevelopment>

individuate instruction, assuming that the advances in software, hardware, and artificial intelligence can tailor instruction to individual student needs (Enyedy, 2014). Personalized learning, meanwhile, is “the ways teachers or learning environments can vary the resources, activities, and teaching techniques to effectively engage as many students as possible” (Enyedy, 2014. p. 3). As the term has become a marketing tool for technology interests and school reform efforts, it has brought under its guise many of the progressive education change agenda items as well as accountability and standards movements (Bulger, 2016).

Schools that embrace personalized learning as a core component of their structure, pedagogy, and ethos seek to create environments which recasts the role of education from an experience foisted upon students into an experience that is shaped with students. By increasing interest, agency, and participation of students, there is an expectation that student motivation and therefore student learning will increase.

Personalized learning places the perceived needs and interests of *individual students* at the core of the curriculum decision-making process. While the students and teachers are still responsible for learning specific knowledge and acquiring particular skills (as determined by state education authorities and local school boards), the features of PL schools shifts agency in making day-to-day decisions toward the classroom (Pane et al., 2017).

In PL environments, the professional educators work with students to help them learn how to decide on and design learning experiences based on knowledge of their own interests, development, intellectual and social growth, and outcome expectations for the schooling experience (Patrick et al., 2013). Students participate in the design of the groups, working spaces, content to be included, and have a more robust understanding of the standards to

which they are held. With teachers as coaches and mentors of learning, students help create assessment and feedback routines to help determine and gauge successful learning and progression through the system (Zmuda et al., 2015).

In many personalized learning schools students are able to play a major role in determining the nature of their education; many decisions heretofore made by teachers, administrators, or legislators are being shared with students, creating opportunity for students to be determining agents “in planning, developing, demonstrating, and applying their learning” (Rickabaugh, 2016, p 6). In participating with educators in these ways, students develop a sense of autonomy in their learning, understand themselves to be competent learners, and become more connected and engaged with teachers and peers. These three constructs; autonomy, competency, and relatedness are required for developing intrinsic motivation as well as supporting agency (UR Communications, 2017). Intrinsic motivation and agency are connected to “career maturity” or the ability of an individual to make appropriate decisions about their lives after high school (Powell & Luzzo, 1998).

Features of Personalized Learning

Recent reports on PL have highlighted several aspects of learning, organization, structure, or pedagogy which constitute a PL environment. For the purposes of this review, themes from these descriptions are summarized in Table 2.1, below. The collection of sources represents organizations and authors frequently cited in literature on the implementation and practice of PL. Sources include educator professional development and change support organizations, education research and advocacy groups, and philanthropic organizations advocating for a particular model for change. To be sure, these sources are not all research

organizations (see appendix one for summary descriptions of the organizations). As empirical research on recent implementation of PL is limited, I turned to those publications which leaders and practitioners widely use to guide their planning and implementation of PL in schools. From these sources, it is clear that there is an emerging agreement on what counts as the common features in a personalized learning environment. A review of this literature reveals several consistent themes that help to frame a definition of PL in schools.

In these reports, different terms are sometimes used to represent similar constructs. In some cases, I have collapsed similar ideas into a single category; for instance, student voice and choice, student ownership, self-initiated, and student-designed, all suggest a similar construct (*Creating a Shared Understanding of Personalized Learning for Rhode Island*, 2016). Table 1 shows the features of PL identified in each group's conception of PL schools. Three of the areas identified are included as features of PL environments in all but one of the reports: 1) *student needs*, 2) *student interests*, and 3) *student voice and choice*. A fourth, 4) *competency-based progression* is present in eight of the eleven models chosen for this review.

CONSTRUCT	I4PL ⁵	LEAP ⁶	Gates ⁷	Education Reimagined ⁸	US Dept of Ed ⁹	KnowledgeWorks ¹⁰	Nellie Mae ¹¹	iNACOL ¹²	Next Gen Learning ¹³	Great Schools ¹⁴	ELDN ¹⁵
Student Needs	X	X	X	X	X	X	X	X	X	X	
Student Interests	X	X	X	X	X	X	X	X	X	X	
Student Voice and Choice	X	X	X	X	X	X	X	X	X		X
Competency-Based Progression	X	X	X	X	X	X	X	X			
Standards Aligned	X				X	X		X			X
Flexible Learning Environments		X	X	X			X	X			
Socially Embedded		X		X		X	X				X
Formative Assessments						X	X				

Table 2.1: Features of Personalized Learning

⁵ CESA#1. (2010). Transforming public education: A regional call to action

⁶ LEAP Innovations. (2017). LEAP learning framework. Retrieved October 10, 2017, from <http://leaplearningframework.org/>

⁷ Pane, John F., Elizabeth D. Steiner, Matthew D. Baird, Laura S. Hamilton, and Joseph D. Pane, Informing Progress: Insights on Personalized Learning Implementation and Effects. Santa Monica, CA: RAND Corporation, 2017. https://www.rand.org/pubs/research_reports/RR2042.html

⁸ Education Reimagined. (2015). A transformational vision for education in the US. Washington D.C.

⁹ US Department of Education. (2017). Reimagining the role of technology in education: 2017 National Education Technology Plan Update. Retrieved from <https://tech.ed.gov/files/2017/01/Higher-Ed-NETP.pdf>

¹⁰ What is personalized learning (2017). Retrieved from <http://www.knowledgeworks.org/personalized-learning>

¹¹ Spangler, D., Brown, S., Simmons, T., McGarvey, B., Cushenberry, D., Griffin, J., ... Dawson, L. C. (2016). Seizing the Moment: Realizing the Promise of student-centered learning. Hartford, CT. Retrieved from <https://www.nmefoundation.org/getattachment/Resources/Student-Centered-Learning/Seizing-the-Moment-Realizing-the-Promise-of-Studen/OPP-Seizing-the-Moment,-Student-Centered-Learning.pdf?ext=.pdf>

¹² Patrick, S., Kennedy, K., & Powell, A. (2013). Mean What You Say: Defining and Integrating Personalized, Blended and Competency Education. International Association for K-12 Online Learning.

¹³ Blouin, S. (2017). What do personalized learning schools have in common. Retrieved from <https://nextgenlearning.org/articles/what-do-personalized-learning-schools-have-in-common>.

¹⁴ Wilusz, B., & Templeton, K. (2017). Educational Leadership: Getting Personalization Right: A Personalized Approach to Equity. Educational Leadership. Retrieved from <http://www.ascd.org/publications/educational-leadership/mar17/vol74/num06/A-Personalized-Approach-to-Equity.aspx>

¹⁵ Creating a Shared Understanding of Personalized Learning for Rhode Island What Role do Different Stakeholders Play in Personalized Schools (2016).

Student needs is a wide-ranging construct, used variously to represent those skills, knowledges, and dispositions which have not been learned, or psycho-social needs such as emotional, social, and mental health issues, or physical needs like food, shelter, clothing, etc. In a school context, student needs are often cited as the focus for student-centered education, long a goal for progressive education. As enacted, however, student-centered education based on student needs imagines the needs of the average student. In the book *The End of Average* the problem with designing for the average becomes clear; while average is a compelling ideal, vanishingly few people (in this context, students) fit the average (Rose, 2016).

PL schools shift the construct of student needs from the needs of the average student to paying particular attention to the needs of individual students. Teachers in PL schools cater to student needs on a person-by-person basis, so that student learning is more tailored to the needs of the individuals, thereby elevating the importance of PL constructs such as competency-based learning, interests, agency, and socially embedded learning (Spangler et al., 2016). Another aspect of PL is helping students understand their needs as they relate to the expectations for learning in schools. As the learners develop a robust understanding of their needs vis-à-vis learning standards, students are more empowered to engage in learning that is “relevant, contextualized, and designed” for each student (LEAP Innovations, 2017). This shift of agency, from adult to student, can be seen in schools in the IPL network as well (CESA#1, 2010).

Traditionally, schooling structures are designed *for* students. PL schools engage in helping students learn about their needs so that they can become more active in the design of their schooling; rather than schooling designed *for* students, PL schooling experiences are designed *with and by* the students (Halverson et al., 2015). This is a significant departure in

what we ask of students. Rather than expecting them to be passive recipients of schooling designed for them, PL schools are asking students to participate as co-authors of the learning experience. This is a more cognitively robust and engaging expectation for students; having students use their understanding of their needs to help design their educational experiences will better prepare for what will be expected of them after compulsory schooling (Mehta & Fine, 2015).

Student interests and how adolescents come to develop interests, both as an intersection between their curiosities and their environment (undivided interest) as well as the ideas introduced to them (situational interest) which generate curiosity has been the subject of research for decades (Krapp, 2000, 2007). Student interest is a starting point for learning in many PL schools (Pane et al., 2017). Technological advances in learning management systems and student information systems provide opportunities to tailor learning around student interests.

Taking student interests into account has been a mainstay reserved for high-status, affluent students in private academies and in out-of-school learning experiences. With the affordances of recent development of data-gathering and management technologies, organizing learning with a more student-centered approach is possible to a far wider swath of schools serving a more diverse student body (Spangler et al., 2016). How learners develop those interests is another specific aspect of the work in PL schools.

In much of the literature highlighted in Table 2.1, interests are considered to be an aspect of learning that adults in the school system take into account. In fact, ten of the 11 cited sources in the table include student interests as a feature of PL. And, for most of those,

interests are taken up as a construct that adults understand about their students and is something to be included as part of their schooling *for* the students. For instance, the U.S. Department of Education includes interests as a construct educators use to help tailor whole-classroom lessons as well as a basis to help provide a variety of learning experiences: “educators have nearly limitless opportunities to select and apply technology in ways that connect with the interests of their students” (2017, p. 29). Similarly, the following quote shows a slant toward learning opportunities designed *for* students: “we can design educational systems that accommodate, adjust to, and take maximum advantage of students’ differing interests” (Spangler et al., 2016).

The LEAP Learning Framework (2017), meanwhile, takes a more definitive stance on the ways which student interests play a role in PL: “Learners develop a deep understanding of needs, interests and strengths” (p. 3). According to LEAP, teachers in PL environments should develop strategies to help learners develop and use their interests to help design learning experiences: Teachers should “Offer tools to help learners identify their own interests, strengths, needs and preferences” (p. 22). These examples illustrate how PL environments teach students to come to know themselves as learners and from that knowledge connect to and master necessary skills. Throughout the LEAP Learning framework and other literature on PL, how students develop and demonstrate agency in schools flows from their interests. Voice and choice, the construct most closely related to agency, is the next feature of PL considered.

Voice and choice, or “having a legitimate perspective and opinion, being present and taking part, and/or having an active role” in learning (Cook-Sather, 2006) is another core construct for PL schools. Voice and choice is related to agency in that it represents the students’

participation in decision-making about their learning (MacBeath, 2006). The extent to which students have agency in their learning is evident in whether the specific learning content, pace, assessment, and place of learning (generally, the conditions of learning) is variable across students or classes within a school. Much like the previous two constructs, voice and choice is a feature of PL in ten of the 11 sources referenced in Table 2.1.

PL schools invite students to participate in “the design of learning activities and the means of demonstrating learning” (US Department of Education, 2017). iNACOL also includes student voice and choice to help determine “what, how, when, and where [students] learn” (Spangler et al., 2016, p. 2). In fact, the iNACOL definition of PL includes the construct voice and choice: “the purpose of the personalized learning framework is to open student pathways and encourage student voice and choice in their education” (Patrick et al., 2013, p. 3). The specific phrase - voice and choice - is used to mean agency in that the two are used to describe the individual student’s ability to control aspects of their learning experience.

The priority of students as active participants in creating the learning experience and providing input into how that learning will be assessed is a marked difference in PL schools. Students are more engaged and willing to persevere through difficulties when they have more control in the nature of the learning process (CESA#1, 2010). Motivation, too, is cited as increasing when students have agency over their learning. Tapping into the satisfaction of having control over educational experiences, students are more interested, and therefore motivated to engage in learning (Education Reimagined, 2015). “To build [agency], learners should have the opportunity to make meaningful choices about their learning” (US Department of Education, 2017, p. 10). Not only should student agency help determine what is being

learned; it should also help guide how the learning should be assessed (LEAP Innovations, 2017). In PL schools that assessment, and the progress to successive learning takes on a different form than has often been the case in non-PL schools.

Competency-based outcomes is another construct that is widely cited as a feature of PL environments; eight of the 11 sources cite this construct as a feature of PL. In schools using competency-based outcomes, students progress from one learning topic, project, lesson, or unit only when they can demonstrate mastery of that concept (The RI Personalized Learning Initiative [RIPLI], 2016). In non-PL schools it is more typical that teachers decide when to present new information based on some other reasoning, such as the teacher's understanding of the average progress of the class, pacing guides, or a requirement to cover a certain breadth of curriculum in a given amount of time (CESA#1, 2010).

PL schools which use competency-based outcomes allow the pace of learning to adapt to the learner; time becomes a resource rather than a limitation (Rickabaugh, 2016). Students are allowed to take the time they need, as individual learners, to complete the learning tasks, develop necessary skills, or master competencies. Assessment of learning is an ongoing, formative task. Formative assessment is the process of providing feedback on student progress during the learning task to help guide future efforts (Black & Wiliam, 2009). Mastery-based learning is a term that is often equated to competency-based learning, both indicating that "students advance and move ahead on their lessons based on demonstration of mastery" (Patrick et al., 2013, p. 22). PL schools use student needs to engage student interests and include student's voice and choice to help design the learning experience as well as the assessment of learning. However, what they are expected to learn is another important aspect

of schooling, and one that is just as important to PL schools as to non-PL schools (Patrick et al., 2013).

Schools which are ***standards aligned*** ensure that curricular materials and lesson planning are set within a framework of commonly (to the school) held standards for learning outcomes (Jennings, 2012). This alignment to a common set of standards has been an aspect of school improvement efforts (see for instance, Squires, 2004). However, in five of the models described in Table 2.1, alignment to well-known, commonly accepted standards is a guiding feature of the school.

Students in standards-aligned PL schools use the standards as a set of targets or learning objectives. Often in electronic form, students compare what they have mastered to the list of standards they need to demonstrate mastery in to develop their next learning, lesson, or project (US Department of Education, 2017). These standards frameworks provide the fundamental set of learning goals to which the schools and the students are held accountable. The adherence to standards is no different between PL and non-PL schools; all students are expected to meet some set of learning standards. How PL schools differ is the extent to which students are aware of the standards, and how they use those targets as guides to help them determine their learning paths (LEAP Innovations, 2017). Once standards are open to the students, and students become involved in creating their learning paths through the standards, core assumptions about schooling become both more obvious, and for some PL schools, more problematic – for instance the age-based class grouping structures of schooling (Zmuda et al., 2015).

Flexible learning environments, the ability of schools to shift the way lessons are delivered or the ways which students engage with learning (Mccarthy & Schauer, 2017) is a structural aspect of PL schools, often controlled by students' expressed preferences. It also may be how the physical spaces of the school are used and organized, and how resources are employed throughout the school (Pane et al., 2017). While this feature is cited in only five of the 11 sources, a broad reading of the literature suggests that all PL schools embrace flexibility in order to adapt to the multitudinous ways student needs, interests, agency, and ways of demonstrating mastery of the standards are taken up by students.

Many of the deep structures of schools are those things that are not flexible, and that we can observe in both PL and non-PL schools. Tye (1998) lists the following as assumptions about schooling that can be seen across school systems in the U.S.:

- Similarly sized classrooms with comparable numbers of students in each
- Subject areas differentiated and separated into strands and class periods
- Control of student movement, behavior, and power relationships with adults
- The use of standardized testing to assess student learning and school effectiveness
- Placing students into groups based primarily on age, and sometimes on perceived ability (as given by aforementioned standardized tests)
- Access to resources and knowledge that is unequal and controlled by the system

Not all of these assumptions are specifically taken on by PL literature. However, PL schools, as they are being implemented, often disrupt many of these shared structures of schooling.

Some PL schools allow students to flow from one area to another, removing barriers between the classrooms by eliminating door or walls. This flexibility in space and control of student movement creates learning environments in which students are able to follow their created learning paths through learning tasks. Teachers create smaller areas for specific aspects of learning, perhaps for a mini lesson on a particular topic, or a space which allows students to gather to provide feedback to each other on their work. At the same time, teachers may create blocks of time in the day for students to work on tasks at their pace but at the same time hold expectations for production of work to ensure students are making progress toward learning objectives (LEAP Innovations, 2017).

Learning that is ***socially embedded*** connects students to each other, to their teachers, families, and communities through their lessons and projects (LEAP Innovations, 2017). This construct recognizes the social nature of learning, and schools that embrace this feature are concerned with creating a cooperative, collaborative learning culture in the school, as well as connecting the school and the learners with their families and community outside of the school (Education Reimagined, 2015).

As students in PL schools develop their learning plans, they may be required to include place-based projects or learning which requires the participation of family members or caregivers. Connecting the learning to adults outside of the school and situating problem solving in students' life contexts helps the learner understand the purpose for learning, develop life-long learning, and see how their academic pursuits relate to the larger world (LEAP Innovations, 2017). Another aspect of learning is that students participate in panels to help provide formative feedback to other students' projects. The ability to collaborate with others in

these ways is one of the areas of need identified in recently developed 21st century skills (CESA#1, 2010).

In addition to the connections students make with each other and their community, schools that engage in socially embedded learning make stronger connections between the school itself and the community. Social and business organizations become partners in supporting the learning of the students. These connections then become a resource for the students as they create networks that have the ability to provide ideas and context for learning projects, are able to help give formative and summative assessments to students, and may ultimately be an opportunity for students to pursue their careers after graduation (Education Reimagined, 2015).

Finally, ***formative assessments*** are ways of providing feedback while still in the process of learning, either to help differentiate instruction (<http://www.knowledgeworks.org/personalized-learning>) or to help students and teachers understand progression toward mastery (Spangler et al., 2016). This construct is another aspect of pedagogy that is widely espoused in progressive teaching, and not unique to PL schools. The ways PL schools use formative assessment is often more intentional and indicative of the desired relationship between teacher and student and of the structures of PL schools.

Formative assessment is a tool to help trace the gaps between present levels and the learning targets, and the path toward mastery (Black & Wiliam, 2009). In PL schools, formative assessments follow this general structure, and at the same time afford the teacher a nuanced understanding of each students' learning. Formative assessment in PL schools is often typified by collaborative work with peers to hone projects or products to show learning, which shifts the

authority in assessments from the teacher to the class as an interactive partnership (Black & Wiliam, 2009). The increased frequency of individual interactions also helps build relationships between students and their teachers (*Creating a Shared Understanding of Personalized Learning for Rhode Island*, 2016).

The eight features described in the previous pages represent a menu of sorts – aspects of PL that schools espousing this model of schooling choose from as they adapt to the needs of their particular context. As seen in the table, some of the authors of the chosen sources write about very particular schools¹⁶, while others take a broader approach seeking to inform the possibilities of PL rather than report on implementation¹⁷. Despite the differences in specifics of implementation, PL educators attempt to shift the deep structure and assumptions about schooling toward students working with educators and leaders in an active partnership for student learning (Halverson et al., 2015).

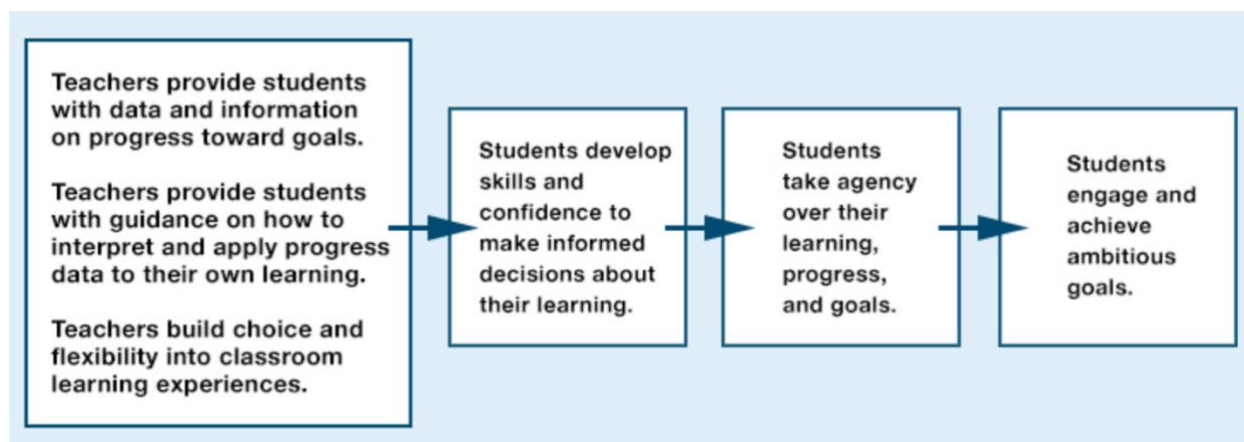


Figure 2.1: Simple Theory of action from <https://www.crpe.org/thelens/starting-why-personalized-learning>

Personalization in Practice (PiP), a research group from the University of Wisconsin, Madison, identified several schools which had been implementing aspects of PL, investigating

¹⁶ i.e. Pane, Steiner, Baird, et al., 2017, US Department of Education, 2017

¹⁷ i.e. LEAP Innovations, Education Reimagined

how those schools used the constructs of PL to create PL environments. Aspects of personalized learning that are written about in much of the extant literature on PL are evident in the way that educators and learners in the PiP study talk about their experiences in PL schools (Halverson et al., 2015). The common themes and structures suggest an underlying theory of action that may resemble Figure 2.1 (Gross, 2017).

The common features of PL are more than a collection of progressive education ideas. Psychologists have written a considerable body of literature describing the connections between some of the features which have become part of the PL ecosystem and increased motivation and learning. For instance, the extent to which a person has a voice in making choices about the nature of their work is related to feelings of satisfaction, intrinsic motivation, and increased productivity (Meng & Ma, 2015). Agentic engagement, or the students' ability to contribute to how their experiences in school are constructed, is positively correlated with higher levels of learning, achievement, and skill and talent development (Reeve, 2013). The connection between interests and motivation is clear; without some level of interest in the topic at hand, there is little motivation to engage in or persist with learning about that topic (Krapp, 2007). Vygotsky (1978) wrote at length about the importance of both the relevance of learning to a larger (than school) setting and that learning is only possible through interaction of others; socially embedded learning provides the context in which voice, choice, and interests interplay to create learning that increases intrinsic motivation, is more engaging, and is personalized.

The learning culture of the school plays an important role in the design and implementation of PL. This learning culture results from the combination of the features

described above, and is not typically addressed in the literature on PL. Most often seen outside of the formal schooling structures, informal learning often is supported by recent technological development and availability of media, that “may well recruit forms of thinking, interacting, and valuing that are quite different from—and, again, more compelling and motivating than—those children find in today’s schools” (Gee, 2004). The literature on *informal learning*, which often takes a critical stance on traditional education, describes the cultures and structures of learning spaces not typically associated with formal schooling (Herne et al., 2013).

Informal Learning

To be sure, school buildings are not the only venue in which people learn new skills, acquire new knowledge, make connections between ideas, or develop social networks. Long before compulsory schooling young people learned how to become an adult and entered into the social forge of society in the workplace (Boyd, 2007). More recently, an increase in the availability of knowledge through social media platforms has allowed for a drastically broadened and deepened pool of available resources for engagement in learning that is not connected to formal schooling (Enyedy, 2014). These new options for young people to engage in interest-driven communities are providing experiences that are more engaging and satisfying than those provided for by the extrinsic rewards granted in traditional school systems (Ito et al., 2010).

In the following section, I take a deeper dive into specific aspects of those features of PL (interest, voice and choice/agency, and socially embedded learning) and how that creates a predominant PL climate. Taken together the features of PL school with the climate of learning it is easier to understand why these aspects of PL are important and relevant.

PL Features

Student Voice and Choice

The student voice movement has within it the possibility of educational transformation: to achieve this potential we will have to discard the now moribund framework of school effectiveness and embrace a view of education which understands that the means of our engagement cannot sensibly be separated from the nature of our aspirations. The narrow instrumentalism of the high performance school must give way to the more widely conceived aspirations of a person-centred [sic] education (Fielding, 2001).

In PL environments, agency, or the ability “to influence intentionally one’s functioning and life circumstances” (Bandura, 2006, p. 164) is developed through providing choice and options in learning. The PiP group from UW-Madison examined agency in schools which defined themselves as PL spaces. They found agency as an intentional focus of these schools:

Educators in the IPL [Institute for Personalized Learning¹⁸] schools took a number of steps to design what we call *a culture of agency* that invited students to take ownership of their learning process. In practice, this meant allowing students more control over the (a) *time and pace of their learning*, (b) *physical and social space in which learning could occur*, and (c) *content learned* [emphasis in the original] (Halverson et al., 2015).

The agency students have in their learning leads them to develop skills, dispositions, and knowledge in thinking and planning about what to do, what they like, and how to position their ideas in a future context they would like to help bring to pass (Doyle, 2015). Students in more traditional spaces have very little effect on what they learn, how they learn, or the pace at

¹⁸ <http://institute4pl.org/>

which they learn. They have limited opportunity to try their own thinking out, and are relegated to following predetermined paths through and out of their public-school experiences (Boaler & Greeno, 2000). In addition, most students are not expected to have any input into how their personal interests might intersect with mandated learning standards. Often, individualization is relegated to “special” education, talented and gifted programs, as part of differentiation strategies to keep students either below or above the class’s pace occupied and compliant or left to extra-curricular activities.

To be sure, creating environments in which student agency, used here to represent students taking an active stance in their education, working as co-constructors of their learning path, and substantially making a difference in how they are educated (Kaptelinin & Nardi, 2009), is a familiar concept in public education. Nearly 90 years ago W. Carson Ryan, a professor of education at Swarthmore College, wrote an article for the National Association of Secondary School Principals on the need to develop secondary schools based on individual needs and the ability of students to make choices in their educational paths (Ryan, 1929). Advocating for a “humanized approach”, Dinkmeyer (1970) points out that personalized learning helps a person to become more involved in learning and develop greater involvement with determining what is being learned. The Keller system of personalized instruction, developed in the 1970’s, included significant involvement of students in decision-making in the learning process had a significant effect on learning: “The superiority of personalized instruction was clear under a variety of conditions and with good and poor research designs” (Kulik, Kulik, & Cohen, 1979, p. 317). A study of the impact of interactive learning experiences made a connection between a student’s interest, the ability to make a choice to study that idea,

and retention of information about that idea (Linn & Their, 1975).

Student voice is an important but largely ignored part of the education reform landscape. “Although students are considered central to schooling, they are rarely consulted in curriculum making” (Brooker & Macdonald, 1999, p. 83). While we know students are capable of complex thought, reasoning, and planning, leveraging their learning in these areas is seldom a focus of schools. “This traditional exclusion of young people from the consultative process, this bracketing of their voice, is founded on an outdated view of childhood which fails to acknowledge children’s capacity to reflect on issues affecting their lives” (Rudduck & Flutter, 2000). However, a major component of PL is to bring out students’ voices and give students agency in their learning. PL environments strive to connect students to their learning and open wider avenues for success in schools by increasing the voice of the student and allowing students to have more choice in the pace, the content learned, the methods of learning and the assessments used, by taking into account the interests and needs of the individual learner (Halverson et al., 2015).

Fielding (2001) shows that voice is expressed, controlled, repressed, and used through established power structures in schools and societal expectations. Conditions in the school, constructed by social hierarchy, tradition and expectations of both teachers and students, control who is allowed to speak, what those speakers talk about, the accepted discourse, as well as access to decision-making authorities. Whose voice is also important. A middle class, white female student speaking to the activity advisor on the theme of a dance is generally accepted speech, whereas the comments of a struggling African American student describing disparate disciplinary consequences to an administrator can be ignored. Without

understandings of the power-embedded avenues through which student ideas are seen in schools, there will be little progress in incorporating student voice in school improvement (Fielding, 2001).

Mitra and Gross (2009) explore how student voice in schools might help resolve pressing issues as well as change the dynamic between adolescents and adults in schools. Student voice can be seen in three levels of use in schools as seen in Figure 2.2 below. When student voice has become part of the decision-making structure of schools, it is most often in the realm of “being heard.” Through student surveys, end of course feedback, or opinion interviews about some aspect of schools, student voices are gathered and used at the end of some process or experience.



Figure 2.2: Levels of Student Voice, from Mitra & Gross, 2009

This level of involvement can create more tension between students and teachers, as the students recognize that their involvement is cursory and that their input, if implemented, would have created a better outcome. Further disenfranchisement with school can occur if the feedback given is not used to make subsequent changes. Meanwhile, more substantial involvement between students and their teacher can lead to improvements across the school

system, including curriculum and assessment development, classroom practice, teacher-student relations, and can even improve teacher training (Mitra & Gross, 2009),

This literature provides powerful examples of how voice can be a driving force for school change. However, incorporating student voice into the decision-making structures of schools can be challenging for adults working in the system. Competing forces of expected curricular and testing outcomes and teacher experiences and dispositions concerning power relations between adults and children influence how teachers hear and understand students' ideas (Bourke & Loveridge, 2016). These existing power structures, at the systems level as well as in the classroom between teachers and students, are enduring and unlikely to change simply through isolated projects which leverage student influence on the structures and operations of a school (Robinson & Taylor, 2013). For student voice to become part of the changes occurring in schools, leaders first must use student voice as a tool for reflection on their practice, pedagogy, and inter-relational ideologies across the school. Only then can it become a tool for change (Robinson & Taylor, 2013).

In PL Schools, voice and choice, or student agency, is as central a feature as is student interest. As shown in Table 2.1 voice and choice is a construct included in all but one of the chosen sources. From the literature on agency and student voice, it is clear that the extent to which students have had an impact on the structures of their schooling will be obvious both to participants and to observers in the schools.

Student Interest

Each of the sources in Table 2.1 clearly show that taking student interest into account when planning for learning is a major driver in learning and is the key to motivation. There is

considerable literature on the connection between interests, learning and motivation, such as Self Determination Theory (Deci & Ryan, 2008). In Self Determination Theory (SDT), the connection between a person's interests and intrinsic motivation is made, as is the development of intrinsic motivation through the introduction of new ideas by influential actors in that person's life (Adams et al., 2016).

Asserting there are two types of interest, Krapp (2000, 2007) describes the person-object conception of interest (POI). The idea of "interest" is a relation between a person as an actor in an environment and the "object of action" in that environment. Interests develop through the interaction between an individual and the environment. From this core conception, Krapp develops an argument detailing interests as an enduring feature of the relationship between person and environment – what she calls an *undivided interest*. These types of interests are characteristics of a person that are relatively consistent over time, such as a lifelong interest in horses, camping or cooking. These enduring interests may lead to a person pursuing learning on that topic of interest, for some to the point of creating a vocational career path centered on that interest (Krapp, 2007). In schools, these types of interests are those which a student brings from her or himself. This is in contrast to interests developed because of the introduction of new ideas.

Situational interest, meanwhile, is an interest that is initially generated from an outside influence. An external actor or object may create an often temporary condition of connection between a person's self and a previously unconsidered object in the environment. Factors affecting situational interest include the type of learning activity, the relationships between outside actor and the learner, and the ability of the specific topic to generate interest (Knogler

et al., 2015). This type of interest is less often associated with the person expending effort to develop expertise in the object of interest, although situational interest can develop into undivided interest (Krapp, 2000). In traditional schools, it has been the role of teachers to lead students to become interested in something they may not have otherwise thought about, providing an opportunity for students to develop new interests (Johnson, 2008).

Generally, a person who is interested in a topic will persevere through challenges in reading level or skill gaps to learn more about her or his object of interest. “Learners are motivated to learn when they can reconcile the perceived value (i.e., reasons for doing/learning something) with the cost (i.e., expenditure of effort and emotional investment required to accomplish the learning)” (Jalongo, 2007, p. 400). Whereas formal education settings have not created spaces which draw upon the interests students bring in as a main source of motivation, environments outside of the classroom are rich with opportunities for children to pursue their interests (Boyd, 2014). School-connected clubs or activities, sports, music, drama, visual or performing arts, business or agriculture-related groups and community-based organizations (Boys and Girls clubs, for instance) provide space and time for students to gather in interest groups.

PL environments incorporate interests in the design of the learning experiences for students. Interest is included in ten of the 11 sources cited in Table 2.1. Clearly the construct of student interest plays a major role in how PL schools are designed and operated. Interestingly, the LEAP Innovations (see the description of LEAP Innovations in appendix one) descriptions of PL environments includes student interest through students coming to know what they are interested in and using those interests to shape what they (the students) are empowered to do;

LEAP uses situational interest as their main focus for this construct. Each of the other definitions use phrases such as “instruction... aligned to his or her interests” (KnowledgeWorks), “instructional content (and its sequencing) may all vary based on learner needs and interests” (U.S. Department of Education), “tailoring learning for each student’s strengths, needs and interests” (iNACOL), “Approaches that individualize learning for each student based on specific strengths and needs, student interests” (Next Generation Learning Challenges). The use of the term “interest” seems to position interests as a construct that is known and incorporated *by the adults on behalf of the students*. For the most part, definitions of PL recognize the importance of student interest, but are not specific about whether these interests are those generated by individual students (undivided interest), or interests developed by students based on ideas presented to them (situational interest). However, in PL schools the exposure to their friends’ and peers’ interests, passions, and projects, new interests may be generated, and over time develop into undivided interests.

Socially Embedded Learning

Harkening back to progressive school design of Rousseau and Dewey, the ideas of the well-regulated freedom and social components of learning play a major role in PL schools. Couched in learning from authentic examples (“Nature should be his only teacher, and things his only models”, Rousseau, 1911, p. 108), Rousseau wrote about learning through exploration and pursuit of interests within constrained boundaries set by the teacher (Rousseau, 1911). Similarly, in *Schools of Tomorrow*, Dewey (1915) posits the necessary inclusion of student interests in the design of the learning. He also thought that a critical component of schools was the social, day-to-day interactions of the students. The social interactions, from learning from

and with each other, collaborating, arguing, and working on ideas stemming from a peer comprise the fundamentals of a school (Dewey & Dewey, 1915). PL schools, meanwhile, accentuate the social aspects of learning as a means to enhance learning beyond the basic skills.

The social components of learning provide the means to develop skills required in the 21st century work force. (Dishon, 2017). In the literature there are two general thrusts of socially embedded learning; the first is the social *nature* of learning, and the second the social *context* of learning (Education Reimagined, 2015). Both play a role in current education systems, to be sure, however, the extent to which explicit and intentional attention is paid to the social interactions of individuals, the social nature of learning, and the connections between learning in the school environment and the community in which the school resides is often different in PL schools than in traditional schools (*Creating a Shared Understanding of Personalized Learning for Rhode Island*, 2016).

The first aspect of socially embedded learning, the social nature of learning, draws from Vygotsky's social learning theory. Learning is inherently social and connected with others. For learning to be possible, ideas and knowledge develop in the context of interactions between individuals. "Learning awakens a variety of internal development processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers" (Vygotsky, 1978, p. 90). Knowledge, then must be constructed with others (Eun, 2010). Teenagers seek opportunities to engage with their peers in social situations. While these instances often fall outside the formal education realm, young people develop ideas, share interests, and deepen networks both in and out of school (Boyd, 2014).

Connecting with peers, teachers, parents, and others as part of the learning structures of the school and as a way of helping individuals share interests across their learning is a design feature of PL schools (LEAP Innovations, 2017). The types of interactions are widely varied, from cooperative project groups to peer feedback, formative assessments discussed in conference sessions with teacher/mentors or community experts on project topics coming into the schools to judge science experiments. Students learn from and with many others, increasing their interests through networks of community connections as well as helping to develop meaningful relationships. Coming to know about how learning is in concert with others becomes a cornerstone of many PL schools¹⁹.

Learning environments which are socially embedded help to provide stability and continuity in children's lives. The relationships developed between the learner, peers and adults, connections that are made in person or virtually, as well as collaborative and group work within and across these types of relationships creates a network of learning support. These networks both support the learner and include each person as a supportive member – thereby strengthening the individual and the group (Education Reimagined, 2015).

The second part of socially embedded learning connects the thrust of the learning topics with real-world and real-time problems and issues in the community (LEAP Innovations, 2017), and incorporates the idea that learning happens outside of school walls as well as in formal learning settings (Education Reimagined, 2015). This conception of socially embedded learning

¹⁹ As seen in (Education Reimagined, 2015; Ito, Gutiérrez, Livingstone, Penuel, Rhodes, Salen, et al., 2013; LEAP Innovations, 2017)

also recognizes that PL schools make more of an effort to include the school as an integral, cooperative part of the community in which the school operates.

Connected Learning (Ito, Gutiérrez, Livingstone, Penuel, Rhodes, Salor, et al., 2013) is an example of socially embedded learning, or “informal learning that has stressed the importance of civic engagement, connecting schools with the wider world, and the value of hands-on and social learning” (p. 33). Connecting students and the standards of academic achievement to which they are held accountable to the issues they are interested in, and the problems and concerns outside of school walls helps them see the confluence of learning and the adult work world (Davis & Fullerton, 2016).

An example of this confluence is seen in research which combines connected learning, civics, and the topic of the next section of this paper, participatory cultures. According to this research, students learn about civics through participation in interest-based networks of learners engaging in political activity (Ito et al., 2015). The researchers write “in contrast to more fleeting or institutionally-driven forms of learning, connected learning experiences are tied to deeply felt interest, bonds, passions, and affinities and are as a consequence both highly engaging and personally transformative” (p. 14). They also point out the limited ability of more traditional teaching practices to affect students’ ability to transfer or generalize ideas and skills (Ito et al., 2015).

Socially embedded learning is an often-cited feature of PL environments, as seen in Table 2.1. Each of the five sources that cite this aspect of PL develop the idea as both a set of features of the school; students learn from and with each other, the topics of learning are connected to ideas and problems outside of the school, and relationships that are developed to

support networks of learners and adults. Socially embedded learning is then a feature of the structure of the school that shapes the learning climate of the school. PL schools that include this feature have a culture resembling *participatory cultures*, *affinity spaces*, or *communities of practice*. In the following section of this paper, I examine the development of informal learning, then turn to these three constructs and make connections to the culture of learning in PL schools.

How Students Choose to Learn

Recent developments in technology have made data more available allowing young people to engage in interest-based learning outside of the formal school setting. Knowledge and ideas which used to be transferred from practitioners to those wishing to learn through brokers of knowledge and ideas – teachers – now can be facilitated through interest-based communities outside of traditional, informal learning spaces (Gee, 2004). New technologies have provided avenues for young people to “hang out”, “mess around”, or “geek out” in networked communities in which members create and self-regulate content, access, and participation norms (Ito et al., 2010). In these spaces provided by technological advances in communications and the wide availability of knowledge and data, individuals decide what to learn, when to learn it, how deeply they want to explore something, and the pace at which they want to develop their learning. Additionally, they form social networks which are not dependent on either where they live or who attends their school, but in the level to which they are interested in engaging in these participatory cultures (Jenkins, Ito, & Boyd, 2016). As Gee (2004) points out, video games and other social platforms supported by technology media create high-interest and low risk environments in which students learn specialized languages

and ways of being, often which are far more complex than school-situated outcome expectations.

These out-of-formalized-school learning structures provide examples to inform reform-minded educators. There is great potential in seeking the natural ties between a student's interest and academically focused environments. When added to the powerful influence of supportive peer networks, we see the three "spheres of learning" of Connected Learning (Ito, Gutiérrez, Livingstone, Penuel, Rhodes, Salen, et al., 2013). While framed differently than in literature on PL, the spheres of learning have significant overlap to the constructs of student interest, student need, and voice and choice.

Connected learning is realized when a young person pursues a personal interest or passion with the support of friends and caring adults, and is in turn able to link this learning and interest to academic achievement, career possibilities, or civic engagement (Ito, Gutiérrez, Livingstone, Penuel, Rhodes, Salen, et al., 2013).

To be sure, these types of learning experiences are a current part of the education landscape for many students. Often this connection between a student's passions and career, academic or civic interests take the form of extra-curricular programs. Clubs like math, chess, academic decathlon, theater, dance, sports, service, Model United Nations, and the like are examples of such activities. These groups provide students the opportunity to engage with other like-minded peers and adults in environments that are supportive and open. They often see equity in the membership as important, and work to help less experienced or knowledgeable members gain expertise (Ito, Gutiérrez, Livingstone, Penuel, Rhodes, Salen, et al., 2013). However, these groups are not available to all students, and schools with fewer

resources are less likely to provide rich extra-curricular opportunities to connect learning to interests. Looking outside of the school, there are examples of self-initiated participation in interest groups made available through technology platforms.

The rise in technology-supported social networking platforms has provided an avenue for people to create affinity groups based on intrinsic interests, engage in the exchange of ideas and knowledge, and join in participatory cultures (Jenkins, Ito, & Boyd. 2016). When children engage in activities outside of school by their own volition – when they choose to do something, learning occurs. Contrasting learning situated in school and self-initiated peer-based learning, Ito, et. al. (2010) shows that youth engagement in new forms of media often lead to learning at a far deeper level than is the case in formalized learning environments. The connection between peer-mediated, interest driven spaces and schools is often seen in PL schools. According to Ito, “the crucial ingredient in youth engagement and successful adult intervention in these spaces seems to be a stance of mutual respect and reciprocity, where youth expertise, autonomy, and initiative are valued” (p. 350). The type of environment described by Ito has the same characteristics as those of a PL school (LEAP Innovations, 2017; Miliband, 2006; Rickabaugh, 2016; Spangler et al., 2016).

In a similar vein, Gee (2004) writes about the importance of “communities of practice”. In these spaces, learners engage in learning about topics of interest from others with more experience or expertise than they have (Lave & Wenger, 1991). Through engaging in activities with those who have more skills, learners gain knowledge and skills embedded in the use of those skills. Interestingly, these communities of practice can take the form of any academic practice or career-based skill, from writing workshops to blacksmith forges, soccer camps to

chess clubs, or more recently, maker spaces. Communities of practice, as a construct, however, is not without problems. The term community is situated in context, and the idea suggests there are those who belong to the group and those who do not. While the idea of communities of practice is enticing, Gee (2004) points to a different construct that is more reflective of how young people, in particular, engage in interest-based activities – affinity spaces.

Features of affinity spaces encompass the lived and shared experiences of people who engage in them, who choose to participate in ways that are meaningful to the individual, and which provides multitudinous inroads to gain, record, share, and engender success in that space. Gee contrasts features of affinity spaces with features of typical classrooms in public education, showing that schooling traditionally involves more proscribed environments in which students are recipients, rather than participants. The importance of considering inclusion of features of affinity spaces is growing.

Young people today are confronted with and enter more and more affinity spaces. They see a different and arguably powerful vision of learning, affiliation, and identity when they do so. Learning becomes both a personal and a unique trajectory through a complex space of opportunities (i.e. a person's own unique movement through various affinity spaces over time) and a social journey as one shares aspects of that trajectory with others (who may be very different from oneself and inhabit otherwise quite different spaces) for a shorter or longer time before moving on. What these young people see in school may pale by comparison. It may seem to lack the imagination that infuses the non-school aspects of their lives (Gee 2003). At the very least they may demand an argument for 'Why school?' (Gee, 2004. p 89).

PL practitioners – educators who are creating learning environments with the features and learning cultures described above bridge the gap between the informal learning young people engage in and the structures of schooling. In these learning environments, students are immersed in a climate in which their voices are heard, their interests central to the learning, and they are co-constructors of the school experience. They choose to participate in learning in ways that leverage their agency, blending the requirements of compulsory schooling and informal learning.

To this point I have described the ideas that guide many PL schools. This dissertation will show some of the differential impact the features of PL schools have on students when compared to students who attend a more traditional school. One might expect that students in PL schools develop ideation about themselves and their roles in determining their learning and life paths differently than students who have experienced non-PL learning (and therefore less opportunity to have agency in school). Given that the stories we tell about our experiences often describe an identity or self-image (Gee, 2005), how students are differentially effected by their schooling may be seen in how they talk about their educational experiences.

Below, I suggest what the impact of participation in PL schooling will be, and how student stories about their schooling and their future plans may differ between PL and non-PL environments. Of the eight features of PL, I predict that three will have the clearest impact on student discourse: interest, voice and choice/agency, and socially embedded learning, as they represent the most significant difference in how students experience schooling. In addition, I believe the extent to which there is an impact of the learning culture (aspects of participatory cultures, affinity spaces and communities of practice) on student discourse may be seen in

conversations with students, again due to the marked separation in the day-to-day experiences of the students in PL and non-PL schools.

PL Schools' Potential Impact on How Students Talk

The three constructs I have chosen to focus on, interest-based learning, student voice and choice (agency), and socially embedded learning, are common constructs in PL schools which the literature suggests should have an impact on student outcomes, and as such may be evident in conversations with students who have been learning in PL schools. Moreover, students in non-PL schools may speak about these constructs differently when talking about their experiences in schools. Students whose interests and passions have been a driving factor in determining aspects of their schooling may characterize their time in schools as being more interesting, more engaging, and more connected to their lives. Those who have had agency over and responsibility for shaping their school experience, made choices about the pace of their learning, the topics of their learning, and environmental factors (seating, partners, flow of the learning, modes and methods to demonstrate learning, etc.) may have a more positive reflection on their learning and schooling experience. Students whose learning has meaning beyond the completion of a set of tasks, who see how formal learning empowers them to engage in real-world problem solving may be more likely to understand and speak about the value of learning as a public good.

From the literature on PL as described previously in this paper, three characteristics of PL schools are constructs I examined through conversations with students who learned in PL schools; student interest, student voice and choice, and socially embedded learning. While these three represent only a portion of the constructs included in the literature on PL, other

aspects of PL are either more generally attributable to progressive learning (student needs, formative assessments), are a feature of school structure that may be opaque to students (flexible learning environments, competency-based progression), or may be so fundamental to the operation of the PL school that these aspects may go unnoticed by students. Specifically, students who relate the extent to which they have agency to control what is learned based on what they are interested in or connect their learning to their peers and their communities stand out from students in the non-PL schools. Their stories about learning are different than the stories about learning in more traditional schools.

Students in PL schools are able to connect their interests to specific learning experiences, standards and learning goals, and outcome expectations. Since part of the structure of PL schools is to help students see how their interests are represented in those standards and outcome expectations, and because student interests become the author of the curriculum, PL students spoke about how they learned to develop their interests and see themselves how those ideas connect across curricular areas and to learning standards or benchmarks. At the same time, students in non-PL schools generally did not connect their personal interests to their topics of learning, other than through the crude rudder of elective course choice in comprehensive high school master schedules. Again, conversations with students in these non-PL schools revealed the extent to which their interests were or were not represented in their learning.

While interests are the starting point for determining the content of learning experiences in PL schools, it is the ability for students to choose what is important to them to learn that makes a difference in their engagement in learning. Young people's ideas as a more

important a determining factor in their daily experience than an adult-driven schedule, average progress in a course of learning, or a curriculum developer's pacing guide is a powerful centering of students in the schooling design. This agency, or ability "to influence intentionally one's functioning and life circumstances" (Bandura, 2006) changes students' role in schools. This ability to have one's voice impact their environment, and to have choice in how they engage with that environment was seen as how students spoke about their high school experience. Conversely, students whose experiences in schools have been more proscribed characterized their agency differently while talking about schooling.

In most schools, students learn from and with each other in a variety of ways. Small group projects, Daily Five (Boushey & Moser, 2006), and workshop structures (Atwell, 1987), among many others provide structured ways to help students learn how to work collaboratively and cooperatively to accomplish academic goals. This aspect of socially embedded learning is fairly common in schools, whether characterized as a PL or a traditional school. Less common is placing the learning in the context of the local community or situating projects within the stated or understood needs of the community served by the school. These connections to the community and the problems and issues that arise in the real lived experiences of the adults who work in the community, is a design feature of some PL schools. In those schools, students are connected to a much more important reason for learning – to solve the real problems faced by their community, and to engage in the same work as adults in the community. This contextualization of the work of schools and students, and the resulting conceptual connections between school and life after graduation is another aspect of PL I was able to examine through the discourse of students as they reflected on their path through school. The clear connections

between assigned tasks in schools and problem solving outside of schools illustrates socially embedded learning which is often a distinct difference compared to students in non-PL schools.

Interests, voice and choice, and socially embedded learning are the three constructs (out of the eight in Table 2.1) that were the most recognizable in conversations with students. Connections between what a student wants to learn and the expectations from their teachers or advisors was clearly delineated. Whether a student's input was used to shape the learning experience, such as the pace of learning or how learning will be assessed was similarly evident. As students described their experiences in schools, the extent to which they work with their peers or connect to problems in the community was also evident.

It is important to recognize that PL schools are not the only places where students are exposed to and engage in learning in ways which incorporate the constructs of interest, voice and choice, and socially embedded learning. To be sure, students have been learning in these ways both in and out of school along with, and sometimes in spite of, the schooling experience. Extra-curricular sports and activities have traditionally played a role in meeting the interest-based needs of some students. At the same time, community-based organizations and activities involve young people in a variety of opportunities to become engaged with the larger context outside of schools. These informal learning settings also have an impact on the learning outcomes for young people.

The ideas which came from affinity spaces (Gee, 2004) or participatory culture (Jenkins, 2007) literature may not be stated in descriptions of PL schools. However, much of what we know about these how these two ideas are operationalized is represented in structures of PL environments (Halverson et al., 2015). Moreover, recent research at UW-Madison highlights

the extent to which PL schools in the study foster aspects of Jenkins' (2007) description of a participatory culture:

...a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one's creations, and some type of informal mentorship whereby what is known by the most experienced is passed along to novices. A participatory culture is also one in which members believe their contributions matter, and feel some degree of social connection with one another (p. 5).

Just as the constructs of interest, voice and choice, and socially embedded learning was evident in the discourse of interview participants, so too were the ways students spoke about how they engaged with their peers, and the value of their work (to the learning community).

Summary

Schools that are structured to embrace personalized learning specifically and intentionally place students in the center of designing learning experiences through involving them in the process of decision making. Moreover, these schools make knowledge about one's best way to learn explicit; students in PL schools develop an understanding of their educational needs and interests, and how those are situated in their communities. Through repeated instances of students making choices about their learning, what they learn, how they learn it, who they collaborate with as they learn, and how they represent their learning, students learn characteristics about themselves that are vital to future success. The constructs of student interests, voice and choice, and culturally embedded learning are features of PL and informal learning that promote interest-driven choice and student agency.

As students' interests become central to the design of learning, students exercise agency in the structure and function of schooling. Student agency and motivation are further promoted when the learning culture is consistent with informal learning. By leveraging the core features of PL (student interests, voice and choice, and socially embedded learning as constructs) and aspects underlying learning cultures of informal learning (social learning networks in which members decide on participation, content pace, and assessment norms) to design learning environments and shape the schooling experience, students will learn to understand their interests and motivations, and how to learn based on intrinsic drives for knowledge – how to become life-long learners, prepared to engage in independent, self-motivated and productive lives.

Chapter Three: Theoretical Framework and Methods

The experiences of students in PL schools, as voiced by those students, has not been captured in the research literature on personalized learning. In order to begin to make sense of how the wide spectrum of practices and structures currently under the umbrella of PL impacts students, I have created an analytical framework concentrating on four areas; three drawn from current writing on PL as it is practiced in schools, and one from participatory culture and affinity spaces literature. These four constructs; interests, voice and choice, socially embedded learning, and the culture of learning are those which I believe are experienced by students. Using these constructs as filters for coding, I examined the impact of in the transcripts of interviews with students in PL schools. Moreover, the students who were enrolled in non-PL schools had a different set of experiences of schooling and learning, particularly in these four areas, and the extent to which there are differences in the discourse compared to PL students is the framework of study for this dissertation.

Altogether, the four constructs described above will be the foci of analysis when examining the transcripts generated from interviews with students. As I analyzed the data from the interviews, I found meaningful differences in the ways students from PL and non-PL schools described their schooling experiences, particularly in these four areas. Certainly, these constructs are not unique to PL schools, and many progressive schools adopt some or all of the aspects of PL without adopting the PL moniker. Extra-curricular sports and activities also provide venues for young people to engage in interest-based activities and learning and provide opportunities for participants to exercise agency, mentor and be mentored by peers, and work to solve issues relevant to their communities. However, the inclusion of these constructs into

the public school realm, and the advantages afforded to students because of these structures and practices (and therefore the justification for considering inclusion of PL into any reform agenda) became a significant finding of this study.

Methods

In this section I describe a method to understand the experience of students in PL and non-PL schools. Using semi-structured interviews with students in PL and non-PL schools, I was able to learn how the experiences of students in PL schools compare to those of students in more traditional learning environments. More specifically, I examined the extent to which the features of PL schools have impacted students and their learning. In semi-structured interviews, I asked students in both types of schools to talk about and tell stories concerning:

- Their experiences in making choices about what and how they learn (examples of student voice and choice as well as participatory cultures)
- How their interests and needs have been incorporated into their planning and learning (examples of inclusion of student interests)
- How their learning has included the context of the student and school (whether learning is socially embedded), and
- Their post high school plans (to be able to gauge their sense of agency)

Through analysis of these conversations, I gained insight into if and how the students expressed their agentic impact on their learning, as well as how the type of learning environment helped them shape their intended path after graduating high school. By comparing the conversations with PL students and students who have learned in more traditional spaces was able to tease out the specific impact of PL structures and learning

cultures from other influences on student's sense of agency and future planning. I conducted interviews using the same protocol in both PL and non-PL schools. To analyze the possible differences in the comparison of these two groups of students, I used a framework drawn from my literature review that focuses on characteristics of student agency (agentic experiences), student interest (inclusion of interest), socially embedded learning (socially embedded education), and the learning climate (culture of learning) of the school. Through this chapter I describe the design of the study, how it addresses my research questions and why this design is well suited to provide insights on the questions. I will also include discussion on the participants in the study, procedures, instrumentation, analysis methods, trustworthiness, ethical considerations, and limitation of this study.

Questions

My research questions are:

1. From the perspective of students, how does personalized learning affect high school student agency, as defined by voice and choice, and incorporate interest and socially embedded learning?
2. In what ways does personalized learning impact students' social experience of learning and post-graduation plans?

From these two questions, I developed four research hypotheses:

- Students' experience making choices about what and how they learn (examples of student voice and choice as well as participatory cultures)

- Student interests and needs have been incorporated into their planning and learning (examples of inclusion of student interests)
- Student learning has included the context of the student and school (their learning is socially embedded)
- Their post high school plans have been affected by their schooling experiences differently than their non-PL school peers (to be able to gauge their sense of agency)

These research themes combined with the characteristics of personalized learning were used to create the specific interview protocol. See appendix two for the interview protocol and appendix six to see the interrelationships of research questions, research themes, PL characteristics, and interview questions. Each question on the protocol was designed to explore student's voices, ideas and opinions concerning their experiences with high school, or in case of students who attended Charter PL, the equivalent of sixth through 12th grade.

Opening

The intent of these questions was to help make a connection between the participant and the interviewer through engaging in talk about a familiar topic, something that the student could consider and answer easily.

- *How long have you been attending this school?*
- *How did you come to attend this school instead of some other option for your schooling?*
- *Describe your school to me; how would you talk about your school to someone thinking about coming to school there?*

Agentic Experiences

Questions in this area probe student thinking to understand their perceptions on the extent to which they felt they took an active stance in their education, working as co-constructors of their learning path, and substantially making a difference in how they are educated.

- *Tell me about how you decided what to learn about in high school; what classes did you take, what options did you decide from, how did you know what you wanted/decided to take or learn?*
- *Tell me about your most and least favorite learning experiences in high school. What made it your favorite? Why was that your least favorite?*
- *What was your involvement in choosing what you learned?*
- *What was your involvement in setting the pace or place of learning?*
- *What was your role in determining how your learning would be assessed?*

Inclusion of Interests

As described in the review of literature above, taking student interest into account when planning for learning is a major driver in learning and is the key to motivation. Questions in this section ask students to relate their experiences in school and how their interests were included in the planning and development of those experiences.

- *To what extent did what the teachers ask you to learn match with that you wanted to learn?*
- *Describe the similarities and differences between things you are interested in your life outside of school and those things you learned as part of school.*

Socially Embedded Education

Learning that is socially embedded connects students to each other, to their teachers, families, and communities through the lessons and projects they engage in (LEAP Innovations, 2017). The four questions in this thematic area ask students about their experiences in school that intentionally make these connections.

- *Tell me about the culture of your school; who did you learn from, who did you learn with, and who did you help learn?*
- *How do the things you learn inside of school connect to your life outside of school?*
- *What impact will your schooling have on you after you graduate?*
- *How were the problems and issues you learned about in school connected to your community?*

Culture of Learning

The next section of the interview asks the participants to think about how they worked with other students in the learning process. To build my understanding of their group-related or learning interactions and experiences with other students, I ask the question both directly (how did you and other students work together) and indirectly (describe a typical learning experience).

- *How did you and other students work together in your classes or at your school - were you involved in group projects, and how did those groups form?*
- *Describe a typical learning process from your high school, how did you start on a new topic? How did you determine what to learn and how to demonstrate understanding?*

Conclusion

This final interview section shifts from asking students about their past or present schooling experiences to asking students to project into their imagined future selves, and the influences on the models they have created for themselves.

- *What are your after-graduation plans?*
- *What did you think about as you made those plans? What influences you as you make decisions about your future?*
- *What should I know about your schooling that I have not asked about?*
- *What questions do you have for me?*

Design

To be able to answer my research questions I used a qualitative design. This type of research is best suited to understanding study participants' interpretations of a phenomenon, how they internalize and represent their worlds, and what meaning they make from experiences (Merriam, 2009). Through conversations with ten high school seniors from each of three schools, two PL and one non-PL, I hope to demonstrate differences in responses to prompts relating to the research questions described above. To help reduce unintended variability, I conducted the research in two school districts: a PL and a non-PL school in one district, and PL school in another district in a community in a different part of the same midwestern state. I also interviewed students whose demographic characteristics (sex, race, free-reduced lunch, etc.) are representative of the school district in which the school operates. Information on the district and school characteristics and demographics, as well as assistance in finding suitable interview candidates was obtained through a structured interview with a school

leader or administrator. After permission was obtained from the students' parents, if they were less than 18 years old, as well as the students themselves, I coordinated with the school leadership to conduct interviews at the school site, during the school day in rooms provided by the school. The two school districts chosen for this study were in an agreement with the PiP research group and all sites were part of the Institutional Review Board's approval of the PiP research.

Bringing differences between PL and non-PL schools in the same school district to light will help develop understandings of one area of desirable outcome for students. Described elsewhere in this dissertation, there is a lack of research similar to what I propose; using this type of method to demonstrate differential patterns of speech, and from those patterns draw conclusions about perceived agency, relation between interest and learning topic, and the social nature and contextualization of learning goals in personalized learning environments is not seen in the research literature. It is conceivable that this examination of speech may help schools embracing personalized learning to show growth and development of learning in their schools that is not captured on typical metrics used to demonstrate the effectiveness of schools.

Data Analysis

The method I have chosen to examine the extent to which students in PL schools speak about their schooling experience in different ways than their non-PL school peers is through discourse analysis. In the most general sense, discourse analysis is the search for patterns and meanings in language as it is used both to reference an experience, idea, or object, and to convey meaning about the speaker as situated in those experiences, ideas, or in relation to

objects (Wetherell et al., 2001). We use language as the primary source of communication. Words are chosen and assembled to convey complex ideas and imagery. To tell stories, convince others, create and strengthen (or break apart!) relationships, we use words in speech or in text. The specific words and constructs created by the communicator are a product of her or his experiences and education; analyzing those constructs allows the researcher to know more about the speaker. By examining words that are used by the participants and comparing those words and how they are used in common to conversations, conclusions can be drawn about the speaker's adherence to or difference from typical speech patterns (Gee, 2005).

There are four broad approaches to discourse analysis, into which the many specific discourse analysis methods can be categorized. An analyst might examine the changes and errors in language to learn more about a question. Or, the types and nature of the interaction of interlocutors might be the focus of the research. Looking at language as it is used in a community, culture, or discourse is a third approach. For the purpose of gaining insight into the effects of PL on how students see themselves as agentic participants in education, how their learning experiences have been situated in contexts relevant to the students, and the impact of learning how to make decisions has on future planning, I used a fourth approach: In the language from interviews, I will look for patterns and specific language associated with voice, choice, agency, and socially embedded learning. In addition, how students from PL schools described their decision making and post-graduation planning in comparison to students in non-PL schools will be relevant (Taylor, 2001).

One specific form of discourse analysis is relevant to this study – the discursive action model. In this analysis of discourse, the focus is on how speakers use language to accomplish

some sort of task. The action of language is to create a recollection of an event, or a person, or an object, and making connections to reasons or causality. As there is no baseline set of data to verify or refute the content of speech, what is relevant is what the speaker attempts to accomplish with language. In the discursive action model, facts are constructed and defended using “discursive devices, such as vivid description, narrative, consensus, and corroboration” (Horton-Salway, 2001, p 152). Another aspect of the discursive action model is how speech is used to establish agency, or the extent to which the speaker attributes her or his intentionality to the outcomes of the action (Horton-Salway, 2001). Using the discursive action in research to examine agency specifically is not uncommon, although I cannot find an application of this method in education research.

Using discursive action to understand the function of language and how speakers situate themselves in their speech was described by Madill and Doherty (1994). They examined language for evidence of speakers constructing language in such a way as to demonstrate, in this specific study, a lack of agency. The authors found that certain constructions of language show how the speaker understands herself in terms of controlling actions and outcomes (Madill & Doherty, 1994). Casting language as the fundamental mode of human communication, Potter (2012) writes that this form of discourse analysis allows researchers to understand how language is used to establish causality, justifying positionality, and how people “act and interact in particular settings” (Potter, 2012).

To ensure the method chosen will be useful in drawing conclusions on the research questions, I engaged in a pilot study with a panel of students from a PL school. In this pilot, I examined the student discourse for evidence of agentic speech using a version of the analysis

methods in Konopasky & Sheridan (2016). In addition to a trial of the methods, the questions I asked of the panel of students centered on how to create an interview protocol for this study; the questions I pose in the protocol in appendix two is drawn directly from suggestions from those students. A brief segment of the interview data is included in appendix four.

In short, to analyze the student responses for indications of agency, I examined the transcripts of student interviews, seeking examples of active or passive voice. Instances of students positioning themselves as the actor or being in control of their actions were taken as evidence of agency. “I” statements, or utterances such as “I chose to attend”, or “I decided to learn” indicated some level of agency. Passive voice or positioning the causation of action as an outside entity demonstrate a lack of agency. For instance, “they put me in a class” or my schedule was set for me” indicates the student does not see her or himself as agentic in that instance.

Participants

To be able to understand the impact of personalized learning on how students represent their level of agency, I conducted one-on-one interviews with high school seniors in schools which characterize themselves as PL environments and in a school that considers itself a traditional learning space. The recent popularity of PL creates a desirability issue, in that many schools which largely adhere to more traditional learning pedagogies and structures have adopted the PL moniker to increase interest in attendance. As of this writing there is no widely accepted definition or set of characteristics which positions schools as PL or non-PL. To help delineate between PL schools and traditional schools, I use a definition drawn from significant literature in this area, as described in my literature review on this topic. Generally, schools

which accentuate four constructs (student interests, student voice and choice, socially embedded learning, and characteristics of participatory cultures/affinity spaces) in the systems design, daily practice, and shared experiences of students in the school I categorize as PL environments.

A research team at UW-Madison engaged in research to describe personalized learning as it was practiced in schools. The Personalization in Practice (PiP) and Personalization in Practice, Networked Improvement Communities (PiPNIC) research teams engaged in studies with several schools which implement personalized learning features as described in the review of literature above (Kallio, 2020; Rutledge, 2017). I chose the research sites from these schools that had been part of research conducted by the PiP and PiPNIC research teams because of the implementation of features of PL in their school design and practice.

These schools were chosen for the original PiP and PiPNIC research because of their adoption of innovative practices in education reform, particularly in the realm of personalized learning. Initially, these schools self-identified themselves as PL. However, in conversations with students, teachers, and administrators in these schools, the research group found that these schools specifically accentuate some or all of the features of PL expanded upon earlier in this paper; specifically, student interests, voice and choice, and socially embedded learning (Halverson et al., 2015). While I have had increased exposure to educators who have embraced PL, the relative number of PL schools in the Midwest region remains small. Although there were many opportunities for me to find students who have attended PL schools, there are far more students who have experienced schools which are more typical of comprehensive high schools as they have operated for decades.

Because implementation of PL takes on many forms, I chose students from two PL schools which operationalize PL in different ways. Both of the schools offer a path to high school graduation and have a graduating class from which I drew participants. Both schools are public, although one is a public charter school, associated with a school district in the region. The other school is an option for students in school district, but the school operates as a non-charter option school in its district. Both schools are small in comparison to their comprehensive school counterparts, and students choose to participate in the PL schools, rather than attend the non-PL school (the default placement for students attending in their respective districts).

The students from the non-PL school have had experiences which largely mirror students at most large, comprehensive public high schools in the Midwest. To be able to compare the experiences between students in PL and non-PL schools in the same district, I included six students from one of the district's comprehensive high schools. As the focus of the study is on characterizations of post-high-school graduation plans, the students to whom I spoke are high school seniors who were on track to graduate.

Procedures

Using discourse analysis, I examined the transcripts of semi-structured interviews with high school seniors. The interview protocol in appendix two lists specific questions grouped into thematic areas corresponding to the three features of PL I concentrated on as well as the learning culture of the school. Appendix six lists the questions in six areas of investigation which fit into the research themes. These specific questions were used as a guide to spark storytelling on the part of the participants while still guiding the conversation in order to gather a

consistent set of ideas from each interviewee. The use of semi-structured interview techniques allowed for the time with the students to flow more like a conversation, or an opportunity for participants to relate portions of their life stories which pertain to the topic (Jackson, 1987; Kvale, 1996). This interview protocol was designed to gather data on my dissertation questions:

1. From the perspective of students, how does personalized learning affect high school student agency, as defined by voice and choice, and incorporate interest and socially embedded learning, and
2. In what ways does personalized learning impact students' social experience of learning and post-graduation plans?

The data was collected in the form of audio-recorded interviews with high school seniors.

The interviews explored participants' experiences in high school, focusing on learning experiences as well as post-high school plans. I specifically asked about their participation in the design of their learning pathways (interest), the extent to which they had influence over the context and content of their learning (agency, or voice and choice), the level of connectedness between topics of learning and problems or issues that are important to them outside of school as well as the extent to which learning was connected to other students. Based on the literature explored earlier in this paper, I was able to explore the extent to which there was a difference in how students in PL and non-PL schools talk about these constructs. Data from focus groups conducted in the fall of 2017 showed that asking some direct questions about choices made about learning environment (i.e., PL school or traditional school) may bring additional insights. Including questions or discussion specific to their perceptions of their level of agency or development of autonomy, rather than inferring those characteristics from speech

patterns, may help differentiate the experiences of the two groups of students. The proposed interview protocol can be found in appendix two.

Instrumentation

In this study, I used transcribed data from interviews to assess the level of interest, voice and choice, and socially embedded learning, as well as the extent to which the schools use aspects of affinity spaces or participatory cultures in their schooling experiences. In addition, to determine their sense of agency in schools, I looked for particular aspects of speech, the patterns that emerge from each interview and between schools which are consistent with demonstrations of agency. A “diagnostic toolkit,” developed by Konopasky and Sheridan (2016), provides the methods for generating understanding of the speaker’s sense of agency. This toolkit “provides the basic structure for exploring agency through its analytic focus on the function of words, phrases, and clauses in context, one of these functions being ‘Agent’ or ‘Actor’” (Konopasky & Sheridan, 2016). This analysis involves looking at transcripts of interviews for evidence of the use of one of three types of “linguistic tools”, or grammatical structures in conversations that can be analyzed, as described below. These tools indicate the level of autonomy present in the discourse of the participants. Generally, agency indicators in speech are suggested by the whether the experience is characterized by placing oneself at the center of the action, and how actions are represented.

A summary of the linguistic tools is show in Table 3.1:

Linguistic Tool	Description	Higher Agency	Lower Agency
Intentional causation			
Transitive/Intransitive	Presence/absence of a verbal object	I talked to the class.	I talked.
Subject/Object pronoun	Self as subject/object of another’s transitive action	I/We did homework.	He gave me/us homework.
Individuation		I walked up to the teacher.	I walked across the floor.

	Animacy and intentionality of object		
Degree of autonomy			
Generic mitigator	Generalized noun placing self among many others	I skipped class a lot.	You skipped class at that school.
Modal mitigator	Verbal indicator of obligation or necessity	I took a job and left school.	I had to take a job and leave school.
Adverbial mitigator	Verbal modifier: just	I stopped coming to class.	I just stopped coming to class.
Causative mitigator	Indicator of an external cause	I left the program.	I had trouble. So, I left the program.
Manner of autonomy			
Process types	Verb types representing different actions in world	Material: I left school. Verbal: I told her what I thought.	Behavioral: I drifted out of the program. Existential: There was yelling.
Temporal orientation	Use of tense to frame future agency	I was a dropout and will always be.	I was a dropout but now I am really succeeding.

Table 3.1: concepts underlying a sense of agency, from Konopasky & Sheridan, 2016

In Table 3.2 I juxtapose the possible responses from students in PL schools and students in non-PL schools. The table uses the construct of interest to seek responses relating the extent to which topics of interest of the students have dictated the topics of study in their schooling experience. Similarly, agency is evidenced by the stated ability of the students to control aspects of their learning and progress through school, such as the pace and place of learning, or their ability to decide how to demonstrate mastery and progress. Social embedded learning looks at how the students talk about the climate and culture of the learning environment (was learning expected to happen in collaboration with others, or was each individual mostly learning independently), and the extent to which the topic of learning was related to problems and circumstances in the students' larger community context.

	Non-PL Students	PL Students
Voice and Choice	Schedule is determined by administrators; choice was in class selection based on graduation requirements. Input from students was limited to inconsequential issues such as	Individual students and groups of students are involved in decision-making concerning significant aspect of schooling, such as schedule, learning progression, the topics of

	prom theme or student council reports to the board.	learning and how that learning would be assessed.
Interests	Interest manifests in the types of classes taken, i.e. chemistry v. physics. Some classes allowed may allow for projects connected to a student's interest.	Topics of learning are determined by student interests, either as a group or by individual students.
Socially Embedded	Most learning is decontextualized or uses a world or historical issue to provide relevancy.	Learning tasks solve problems in the students' community and is expected to collaborate with others in the school, perhaps through group participation.

Table 3.2: Anticipated differences in conversation about schooling experiences

Limitations

As with any research, there are limitations to what can be extrapolated, generalized, and transferred from the data and analysis outlined in this work. The intent of this study is to examine the extent to which there is a difference in the way students in the two PL schools and students in a non-PL school characterize their experiences in school. I do not suggest that the students I spoke to are representative of all teenagers, all high school students, or all high school seniors. The choice of limiting participants to seniors on track to graduate may have unintentionally eliminated the voices of students who have very different experiences of agency.

These questions are posed to 20 students in the Midwest, and as such they have particular biases, histories, bodies of experience, and ways of thinking that shape how they respond to the questions I ask (as is the case with any research using the stories of the participants as the data). These students attending PL schools self-select into these programs; there is no ability to employ rigorous random-control experiment criteria. This study is entirely

dependent on the described experiences of high school seniors and does not include my observations of pedagogy or practices in any of the schools included in the study. As such, there is no verification or triangulation of the data other than the similarities of the descriptions of the school experiences between students. Moreover, this research does not attempt to connect specific features of PL and specific outcomes for students (such as correlating observations of conferring with students with socially-embedded education and the development of undivided interests), which could have added depth to an understanding of PL and how certain features of PL may help address problems of practice in traditional learning environments. Additionally, I bring my bias based on my work in education, my experiences and training, and my personal context, as well as a personal bias toward personalized learning as a more effective schooling construct.

Trustworthiness

This study, like all qualitative research, is not in search of an overarching truth, nor does it seek to establish generalizable “rules” or understandings about students, personalized learning, or agency. However, it is critical to establish credibility in the findings, such that there is some connection between the findings of this study and the lived experiences of students in schools (Merriam, 2009). Through gathering participants from more than one PL school, I hope to establish some level of triangulation. By having two sources of data from schools which interpret and operationalize PL in different ways, my hope is to show that supporting voice, choice, and the development of agency leads to positive outcomes for students across settings.

Additionally, using an established method (Konopasky & Sheridan’s toolkit) for interpreting the level of agency demonstrated in speech patterns supports the conclusions of

the study. Combined with methods of handling data (Richards, 2015), extensive note-taking and memo writing (Miles et al., 2014), meaning drawn from the data can more comprehensively be situated within my personal positioning as well as establishing credibility of the findings.

Through carefully choosing two PL school sites which are different from each other (one a charter, one not, the two are separated in different areas of the state in which the study is conducted) and comparing the responses of students in the PL schools with students in a non-PL schools in one of the districts, I have attempted to reduce data bias or intrinsic contaminating variables across populations. Using the same interview protocol with all students helped reduce the impact of the interviewer's influence on the responses of the students. Working with the school to ensure that the students are demographically representative of the larger school district helped to isolate any difference in responses to an effect of the type of schooling, rather than other potential influences. As this was a small-scale study, I was the sole analyst of the data; there was no opportunity for interrater verification during coding and analysis. Future studies on this topic would benefit from triangulation amongst a research team.

This work is qualitative research and does not seek to foment a theory about the effects of personalized learning; as previously mentioned at this point there is no accepted set of characteristics or enacted features which delineates PL from non-PL schools. I do forward what I believe to be constructs of progressive education which, when enacted together create a culture of learning that makes a difference for the learners in that system.

Ethical Considerations

Specific ethical considerations for this study are mostly centered on maintaining the anonymity of the schools and participants. To ensure containment of identifiable information, I use pseudonyms to prevent individual identification. Also, to prevent identification through use of personal information about the participants, I include only information on gender and grade level of the participants and will change the school names to fictional creations to further obfuscate.

Another potential ethical issue is that of defining schools, teachers, or practices as “good” or “bad”. While I characterize the development of agency as a positive outcome for students, omitting the hypothesis underpinning this study from conversations with students, and even then positioning findings as information drawn from student experiences (rather than positioning PL schools as more “ideal”) does not value one model over another.

In the following chapter I show those areas of greatest difference and greatest similarity in the descriptions of schooling and student experiences between the schools. By highlighting the similarities and differences in this way, readers will be better able to draw conclusions and make strategic, systems, or policy decisions based on increased awareness of how personalized and non-personalized high schools impact important aspects of student learning.

Chapter 4: Similarities and Differences

The Schools

The data for this study is drawn from semi-structured interviews with students attending one of three schools: Public PL, a self-described personalized learning school in the same district as HP High; Charter PL, another personalized learning school in a different school district; and HP High, a comprehensive high school. All three schools are located in the same Midwestern state.

Public PL is a small school with just under 100 students. It is located in the same school district as HP High School; both are in a suburb with about 20,000 residents, is close to a major university, and is mostly white (about 90%), with a median age of 39. As the school has a small number of students enrolled, much of the information contained in state level performance reports is suppressed. Therefore, the data specific to the PL school used in this study came from the school's administrator. The information that is shown on the state "report card" indicates that students attending Public PL perform at a slightly lower level than their peers who attend HP High. The school, similar to its comprehensive counterpart in the district, is reflective of the community demographic, but with considerably higher representation of students who need extra support to be successful in a formal learning environment (i.e. Individualized Education Program, 504, social/emotional supports, etc.). 40% of Public PL students qualify for such services as opposed to 10% of students attending HP High. There is also a higher percentage of students from economically disadvantaged homes, also about 40%, whereas HP High's percentage is 15%. (Staff Interview #4) As described by the school's principal, students and families opt into Public PL for specific reasons:

...kids who choose to come here across the board are looking for something different. So they're either looking for something different because the system has not been serving them well... And that's a fairly large proportion of our students... then there's a group that chooses us because they recognize that having an interdisciplinary approach that gives them opportunities to really dig in deep and do authentic work is a better preparation for them... for postsecondary experience whether that's going on to college or the workforce... they see that as a benefit. (4)

Public PL was created to provide an alternative learning structure and system for students in the district. According to the school's administrator, "our original [goal was to] redesign schools in a way that by design... get students engaged in learning... And our three pillars that we've used to support that mission is..., personalized learning, place-based learning, and democratic education". (4)

Charter PL is another small "choice" school located within the physical boundary of another public-school district. Unlike Public PL, Charter PL is a charter school and therefore operates under different regulations than schools in the supporting and surrounding district. Like Public PL, state report card data is suppressed because of the small number of participants (n) in any particular cell in the report card's data table. Also different than Public PL, students can start attending Charter PL as young as sixth grade. The demographic profile of the community is slightly more diverse than is the case for HP High and Public PL: 70% White, 10% Asian, 10% Hispanic, 5% African American. About 40% of students are from economically disadvantaged families, and 15% of students in the school district receive special education supports. The school is similar to the surrounding school district both in terms of the race,

ethnic background and the number of students who are economically disadvantaged as well as in the proportion of students who need added supports to be successful in their learning.

Charter PL has been in operation for more school years than has Public PL. The school is described by one of the founding advisors (teachers) as a “student centered teacher powered project based personalized learning environment with advisories” (19).

Charter PL and Public PL were included in other research by the PiP and PiPNIC research teams and both schools demonstrated the inclusion of PL features as described in Chapter Two. These schools support active participation by the learners in the schools, centering student agency, using student interests as the content driver, and shifting the social nature of learning to be more collaborative between students and teachers as well as the social context of learning (Halverson et al., 2015).

The advisor who interviewed for this study has noticed a shift in the reasoning students use in choosing to attend Charter PL instead of their default school:

...it's taken time to... move from a clientele who are coming as a reaction to failure at their [home school] to... a clientele who seeks an innovative or more progressive way to learn. So now, you know... if we bring in 15 new kids, you know I could say that up near half of them are coming because they just are bored or they realize that the traditional school has its flaws or they are looking for more challenge or more personalization, rather than the fact that they are failing where they are. But then... some people do seek us. Or... we have these niches of... [students] who are good students but can't keep up with the daily assignments or else a zero mentality who need time... but also want to

do well in school. So we do have that population... And then also growingly siblings or families who are returning. (19)

HP High School is a comprehensive high school in the state where the study was conducted. According to the 2010 census, the school is located in a suburb with about 20,000 residents. The faculty's median age is about 40, and the school serves just over 2000 students who, like the town the school serves, is mostly white (75%)²⁰. The school is highly regarded in the region as a high-performing school, winning academic recognition at the state and national level. A higher percentage of high school students graduate in four years than the state average, and of those students, 70% plan to attend a four-year college, and about 20% plan on a two-year school.

Participants from HP High were selected from a pool of high school seniors who were on track to graduate. Administrators from the school chose students, based on my requirement that the group they chose be representative of the school demographics. I was originally given nine names of students; through the permission and scheduling process this number dropped to six students. While this number may seem small and was less than we had planned on, through the interviews I found that I was reaching saturation in the data. Given the limiting factor of asking to speak to high school seniors who were on track to graduate, this study does not attempt to represent the overall experience of all students enrolled in HP High.

Both PL schools allowed students to self-select to participate in the interviews. The school staff did some amount of recruiting to ensure the demographics of the participants

²⁰ Demographic data obtained from the 2010 census, while the school demographics are from a 2018 state public school authority.

reflected the demographics of the school. There were more students who indicated interest in participating in the study than eventually sat for the interviews; six of the 20 students initially identified to interview did not do so.

The interviews at HP High were conducted in staff offices in the school's counseling center over the course of one week. We used a counselor's office to help increase the comfort of the participants by talking to them in a place that was familiar to them. At the PL schools we used a classroom that was not in use. I and another researcher conducted the interviews with the students at Public PL and HP High. Due to scheduling constraints a research partner conducted the bulk of the interviews at Charter PL alone. There were no school district employees in the room during the conversations.

In the following sections I will explore the similarities and differences in the responses, stories, and voices of the students who participated in this study. I have chosen a subset of all responses to highlight the greatest areas of alignment or separation in student experiences of learning in order to facilitate the reader's ability to draw conclusions about the effects of personalized learning in contrast to a more traditional schooling system. From this, education leaders and policy makers will be more able to support an informed change agenda.

Codes and Data

Table 5.1 shows the codes that were drawn from the interview questions. The colors correspond to the six question areas seen in appendix six. The questions can be found in the interview protocol the appendix two as well. I used a filtering process to draw the most significant findings from this table, considered here to be codes that were either most consistent or most different between the two types of school environment.

Question #	Code	# in PL Schools	% in PL Schools	# in non-PL schools	% in non-PL schools	# Difference	difference
1c	Chose because of relevancy	9	64%	0	0%	9	64%
1c	Chose because of relationships	3	21%	3	50%	0	29%
1d	Learning is tailored to the student	11	79%	0	0%	11	79%
1d	Students have agency	10	71%	0	0%	10	71%
1d	School is about connections to peers	2	14%	5	83%	-3	69%
1d	Learning is project based	10	71%	1	17%	9	54%
2a	Learning/classes chosen because of career interest	1	7%	5	83%	-4	76%
2a	Learning is in classes	6	43%	6	100%	0	57%
2a	Learning connected to graduation requirements	8	57%	1	17%	7	40%
2a	Learning is relevant to student	7	50%	1	17%	6	33%
2a	Options in what to learn	11	79%	3	50%	8	29%
2a	Agency in choice (class or learning)	13	93%	6	100%	7	7%
2a	Chose what to learn (class or project) based on personal interest	13	93%	6	100%	7	7%
2b	Most favorite learning connected to relevancy	7	50%	1	17%	6	33%
2b	Most favorite learning connected to agency	7	50%	1	17%	6	33%
2ci	Student decides what to learn	13	93%	0	0%	13	93%
2ci	Students found new passions/interests through learning	6	43%	0	0%	6	43%
2ci	Students chose classes	6	43%	5	83%	1	40%
2ci	Chose what to learn with advice from teacher/advisor	7	50%	1	17%	6	33%
2ci	Spoke with agentic voice	9	64%	2	33%	7	31%
2cii	Student controls pace	11	79%	0	0%	11	79%
2cii	Adaptable pace	10	71%	0	0%	10	71%
2cii	Work with teacher/advisor on pace	9	64%	0	0%	9	64%
2cii	Student controls place	6	43%	0	0%	6	43%
2cii	Place is adaptable	5	36%	0	0%	5	36%
2cii	Learning space can be off campus	5	35%	0	0%	5	35%
2cii	Teachers give guidelines on pace/place	10	71%	6	100%	4	29%
2civ	Project as summative assignment for a class	0	0%	4	67%	-4	67%
2civ	Multiple pathways to demonstrate learning	9	64%	0	0%	9	64%
2civ	Formative feedback used	7	50%	0	0%	7	50%
2civ	Learning is skill focused v. content	6	43%	0	0%	6	43%
2civ	Student involved in grading/assessing	6	43%	0	0%	6	43%

2civ	Ability to improve on assignments/projects	6	43%	0	0%	6	43%
2civ	Rubrics used for assessment of learning	10	71%	2	33%	8	38%
3a	Match between learning topic and student interest	14	100%	1	17%	13	83%
3a	Project subject determined by student interest	11	79%	0	0%	11	79%
3a	Learning driven by student interest	14	100%	2	33%	12	67%
3a	Classes chosen by interest	4	29%	5	83%	-1	54%
3a	Match learning with interests with teacher	12	86%	2	33%	10	53%
3a	Teachers do not have agency to grant students agency	1	7%	3	50%	-2	43%
3b	Life outside informs learning inside	13	93%	1	17%	12	76%
3b	Spoke with agentic voice	14	100%	3	50%	11	50%
3b	Provided a specific example	14	100%	3	50%	11	50%
3b	Stated no connection between out and inside	3	21%	4	67%	-1	46%
3b	Interests drive motivation to learn	4	29%	0	0%	4	29%
3b	Mentioned clubs/activities	2	14%	3	50%	-1	36%
4a	Teacher is main source of learning	0	0%	6	100%	-6	100%
4a	No separation between grades	12	86%	0	0%	12	86%
4a	Learning comes from teacher	4	29%	6	100%	-2	71%
4a	Learn from other students	13	93%	2	33%	11	60%
4a	Spoke with agentic voice	9	64%	5	83%	4	19%
4b	Learning connected to personal interests	5	36%	0	0%	5	36%
4c	Learned about interests	9	64%	0	0%	9	64%
4c	Impact of schooling more than academic	12	86%	4	67%	8	19%
4d	There is a connection between school/learning and community	13	93%	1	17%	12	76%
4d	There is no connection between school and community	0	0%	4	67%	-4	67%
4d	Multiple opportunities to connect learning to local community	9	64%	0	0%	9	64%
4d	Connection through service hours	9	64%	0	0%	9	64%
4d	Students make connections	9	64%	0	0%	9	64%
4d	Opportunities, but not a school-wide focus	0	0%	3	50%	-3	50%
4d	Experiential learning about local issues	7	50%	1	17%	6	33%
5a	Teacher assigns groups	2	14%	6	100%	-4	86%
5a	Group work normal/frequent	12	86%	3	50%	9	36%
5a	Students create groups	13	93%	4	67%	9	26%
5b	Learning happens through projects	14	100%	0	0%	14	100%
5b	Structured way to generate student interest	14	100%	0	0%	14	100%
5b	Learning is student driven	14	100%	0	0%	14	100%
5b	Learning through research	13	93%	0	0%	13	93%

5b	Listen, practice, assess process for learning	0	0%	5	83%	-5	83%
5b	Learning connected to outcome expectations	9	64%	0	0%	9	64%
5b	Formative process to complete projects	7	50%	0	0%	7	50%
6a	College plan influenced by family	2	14%	3	50%	-1	36%
6a	Academic college	12	86%	6	100%	6	14%
6a	Academic major known	12	86%	6	100%	6	14%
6bc	Used agentic voice	10	71%	2	33%	8	38%
6bc	Decision to go based on knowing self	10	71%	2	33%	8	38%
6bc	Going to college to help others	3	21%	0	0%	3	21%

Table 4.1: Codes

From this table I am able to show the greatest similarities and greatest differences in the responses from students in the two schooling structures. The colors correspond to the question areas (opening, agentic experiences, inclusion of interests, socially embedded education, culture of learning, and conclusion). Restricting the analysis to those codes that are either very different or very similar between PL and non-PL schools provides a structure to show how those similarities and differences have a differential impact on students. The six codes that show the highest level of alignment between the PL and non-PL schools are:

- Spoke with an agentic voice
- Impact of schooling more than academic
- Plans for academic college
- College or university major known
- Description of agency in choice of class or learning topic
- Topic of learning or class choice is based on student interest

There are ten codes that showed the most difference between the PL and non-PL schools:

- The teacher is the main source of learning
- Learning happens through projects

- There is a structured way to generate student interest
- Learning is student driven
- The student decides what to learn
- Learning is based in research
- There is a match between the topic of learning and student interests
- There is no separation between grade levels
- The teacher assigns groups for project work
- The process for learning is students listen to the teacher, students practice a skill, then student learning is assessed

In the following sections I will investigate these areas of greatest similarity and difference based on the stories that students related in response to the interview prompts.

Similarities

There are similarities and differences in the students who participated in this study in addition to the fact that they were on track to graduate from either a PL school or a non-PL school. Some similarities were across the board, such as all were native English speakers, all lived in the same midwestern state, were approximately the same age and all but one considered to be traditional seniors in their fourth year of high school. In terms of the general human condition of high school seniors, they were very similar. As I will explore in this section, similarities in the outcomes of schooling for these students seems in many ways comparable.

Table 5.2 shows some of the greatest similarities in responses to the interview prompts. This table is a curated selection of all of the codes that capture the responses to the prompts in the interviews. The first column (Question #) corresponds to the prompt as numbered in the

appendix two: Student Interview Protocol. The second column, Code, is a list of the codes representing responses to the prompts that are very similar (less than 20% difference). This range was chosen to highlight characteristics that show alignment between personalized learning and traditional schooling at the high school level as well as the similarities in the outcomes of these very different ideas of how to operationalize schooling. For clarity, I have included both the number of students whose responses included the codes as well as the percentage of students in either setting. In this way, I was able to look at proportional differences and similarities, necessitated by the different number of student participants in each venue.

Question #	Code	# in PL Schools (n=14)	% In PL Schools	# in non-PL schools (n=6)	% in non-PL schools	# Difference	% Difference
4a	spoke with agentic voice	9	64%	5	83%	4	19%
4c	Impact of schooling more than academic	12	86%	4	67%	8	19%
6a	academic college	12	86%	6	100%	6	14%
6a	academic major known	10	71%	5	83%	6	12%
2a	Agency in choice (class or learning)	13	93%	6	100%	7	7%
2a	Chose what to learn (class or project) based on personal interest	13	93%	6	100%	7	7%

Table 4.2: Similarities

There are six codes that show alignment between the experiences and outcomes in the PL and non-PL schools included in the study: two codes from socially embedded education, two from agentic experiences and two from the conclusion. It was somewhat surprising that the greatest area of alignment was in the area of agentic experiences. As student agency is a central feature of PL schools, and is generally not considered in traditional schools, that most

students in all three schools demonstrated agency or spoke with an agentic voice was an unanticipated finding.

All but two students (both from Public PL) indicated they had agency in determining what they learned in high school. An important caveat here is that HP High students had agency to choose classes, “it’s something that I was interested in... I just get more and more interested in it. So then I took classes like surrounding that topic,” (Interview #9) whereas students in Public PL chose both classes and specific learning projects, “the classes evolve around a topic. And then whatever learning concepts we can dive into around that topic is what you get out of the class” (3) and Charter PL chose the learning projects “I first just went off of [my interests to create a project]. And then during the projects you have like subtopics. While I research, I guess I find that there’s a lot more ideas to come from that.” (16) All students in this study had a voice in their learning. I see a limitation in the data gathered for this study however, in that the students who participated were on track to graduate and all but one was on a four-year path to graduate from high school. There may have been age peers of these participants who have not seen the same level of success; hearing from young people who are not as successful would add depth to the understanding of agency in personalized and non-personalized learning environments.

Most of the seniors who participated in the study know what they are interested in pursuing when they graduate from high school. As seen in Table 4.1 all but two students attending the PL schools and all of the students from HP High plan to follow academic pursuits after high school either in a four year or a two-year college. Most of these students also have a major field of study in mind. “I would like to pursue writing and or business.” (2) “I hope to

major in environmental studies or sustainability.” (10) “...throughout my projects and things I’ve developed an interest in psychology, so I think I’ll major in psychology.” (22) This quote from a student attending Charter PL illustrates a point that many of the student participants made from all three schools; their post-high school interests were discovered, shaped, and/or supported while in high school.

The impact of schooling goes beyond the acquisition or use of knowledge, according to students from all three schools. This point has less consistency than other areas discussed in this section; more students learning in the two PL schools recognized this point. “The things that I talk about most when people ask me about my school is my time management and my responsibility and my professionalism.” (20) As students spoke to this idea of school having more than a purely academic impact, students from the PL schools more often mentioned responsibility and professionalism. Students at HP High also said that their experiences prepared them for the rigors of college while characterizing that preparation somewhat differently: “I have a good base to build off of with my college classes and stuff. Um. And like just study habits and stuff like that.” (9) These participants see a connection between what they are asked to do in high school and what they anticipate they will face in college. Interestingly the non-PL students posited these skills as discrete acquisition of knowledge supports like study habits, homework, or repetition and PL students describe skills considered to be 21st century skills such as responsibility, initiative, and accountability (Trilling & Fadel, 2009).

As seen in many of the quotes throughout this chapter, students often spoke with an agentic voice. That is, they positioned themselves as principal actors in the events they described in the interviews. Exemplified by “I” statements, I have been connecting agentic voice

to students' view of their ability to influence their experiences in school. In Table 4.1 it seems as though students in the non-PL school spoke with an agentic voice at a higher rate than did students in the two PL schools (five out of six vice nine of 14). However, this difference was in question 4a ("Tell me about the culture of your school" see appendix two). Agentic voice is evident in every response and every question in similar proportions. Using the filtering metrics which resulted in Tables 5.1 and 5.2, only one of the questions resulted in a significant difference in the rates of agentic voice seen in the student responses. Students see themselves as actors, authors, and influencers as they wend their way through high school. To be sure, the context of their agency is different, as discussed above, just as the scale or grain size of how their agency affects how their in-the-moment experiences are shaped.

Differences

Some differences were marked between students in the PL and non-PL schools in the study. As described in more detail in the following chapter, the grain size of agency students describe separates the two types of schools; students in PL schools make day-to-day decisions about their learning and schooling, whereas students in non-PL schools exercise choice when they choose the school they attend or the classes they take, and the day-to-day flow of school is determined by the adults. These differences are most manifest in descriptions of learning and the structure of the schools, and generally align with the features of personalized learning as described in the literature review.

Similar to the process to determine the most significant similarities, I have chosen a subset of all of the questions to examine the differences that are more consistent across student responses. As can be seen in table 5.3, there are more differences at the 80% or greater

level than there are similarities with 20% or less difference between PL and non-PL student responses. In the ten codes that show the greatest division between the schools, six are from questions about the culture of learning, two from socially embedded education, one each from agentic experiences and inclusion of interests, and no large differences from the conclusion section (which focused on the future planning of the participants).

Question #	Code	# in PL Schools (n=14)	% In PL Schools	# in non-PL schools (n=6)	% in non-PL schools	# Difference	% Difference
4a	teacher is main source of learning	0	0%	6	100%	-6	100%
5b	learning happens through projects	14	100%	0	0%	14	100%
5b	structured way to generate student interest	14	100%	0	0%	14	100%
5b	learning is student driven	14	100%	0	0%	14	100%
2ci	student decides what to learn	13	93%	0	0%	13	93%
5b	learning through research	13	93%	0	0%	13	93%
3a	match between learning topic and student interest	14	100%	1	17%	13	83%
4a	no separation between grades	12	86%	0	0%	12	86%
5a	teacher assigns groups	2	14%	6	100%	-4	86%
5b	listen, practice, assess process for learning	0	0%	5	83%	-5	83%

Table 4.3: Differences

Of the ten most significant differences, there are three codes which were represented by all of the students in PL schools and no students in the non-PL school. All three of these codes came from the prompt “Describe a typical learning process from your high school. How did you start on a new topic? How did you determine what to learn and how to demonstrate understanding?” All PL students described the learning process as primarily project-based: “...starting out you'll have a project ideas list and... oh I'm interested in this but I don't know a lot about it so I want to see if I can do that as a project.” (17) Students attending the HP High, meanwhile describe a very different learning process in which students listen to a teacher,

practice a skill, and are assessed ostensibly on their mastery of that skill or memory of the objective. This student describes a typical learning progression in mathematics class at HP High:

[The teacher will] give you the equation but want you to like find how like someone made that equation. Um. And then we'll start like using it more in like daily work so like we'll have like warm-ups and then we'll use that equation. So, you get like more familiar with and then it'll show up in like our homework. So then you're really like even more familiar with it and then we usually have these like check in's with like new ideas or topics and then you get to like see how you would score on a test. And then more practice and then you basically just do it on a test again. (7)

HP high students clearly see the development of knowledge or mastery of a skill comes from the teacher. "... you learn the material because the teacher taught it to you. And then they'll do some review with you and then either test or a project." The student points out when a project might be used instead of a test: "And I think if the material is more subjective there's more room for a project. Um. But if not it's usually a test." (10) The non-PL students describe an established structure or a common understanding of how learning happens in schools.

PL students also described a structured way to connect student interests to learning. Starting from generating student interest on a topic that would be used for the projects through the assessment of student work, this example typifies the process at Public PL, which is similar to how projects start in Charter PL.

So, you can start a project either by a big structured [one from] the teacher or how I did it was um I went into a project lab which was open rein basically. But... you need to come up with a project by filling out a brainstorm sheet of what's your like your

interests and ranking them and then picking your top three and picking what out of those top three you can get out of it and see what artifacts or elements... you can fit into it and see where you get the most out of [the project] and then go with that. (1)

Students in these PL schools decide what to learn, while the topics for learning in the non-PL school were determined by the teacher, "...who would just be like OK, so after a test they'd be like now like something new. Sometimes it'll... connect chapter 5... to chapter 6." (13) Some students at HP High indicated that the teachers followed the larger school system when determining the next learning topic: "...it's not up to the students. It's... up to the teachers and their curriculum... they just go by a book. So it's not up to them as much, either, given that they... choose what they teach from the book." (8)

This point leads to the next difference: at HP High the teacher is the main source of learning, while in the PL schools the adults usually advise, support, and recommend how to learn and only sometimes provide direct instruction on content. All non-PL students interviewed indicated either explicitly or implicitly that teachers are the source of learning. One student from HP High related "...it's mostly a teacher [who] gives you what you need." (7) PL students from both Public and Charter PL clearly position the adults who work with them as advisors first, and conveyors of content only as needed. At Public PL in particular, students said that teachers and students learn together: "I think staff learns alongside of us... So I think a lot of people are learning within courses, not just students." (1)

Many of the largest differences between PL and non-PL student experiences in learning seen in Table 4.1 include how research is the method for students to develop knowledge, the match between student interests and learning topics, and how students determine the pace of

learning. The next quote is a longer detailed explanation of the process of learning at Charter PL, which exemplifies the interplay between students and staff and captures these differences between the experiences students in the PL and non-PL schools in this study.

[Advisors] have like a questionnaire type thing where they ask like some of your interests and like something you've always wanted to learn. I haven't looked at it in a few years because once you start coming up with projects it gets easier, so you don't need those motivational prompts. But that's something that they do have for people who may be struggling with coming up with different ideas and you can always talk to different students and advisers to come up with ideas as well. And then once you have your idea for what you want to do for your project you then start the proposal phase. So, our project is split up into six different phases and so..., it starts with a proposal phase which is when you start doing research on your project and dissecting it being like, is this something that I can really study and like learn about for six weeks? Because sometimes you just can't.

This illustrates the project initiation, starting with determining the student's interests through a process to create a proposal and begin the research to learn the content.

And so you do that process and you write a rationale and so that's something going through saying why [do] I wanna do this project. The different subtopics..., the standards I want to work on in the project, and different things like that. And then once you have your rationale done and you- and everything put together you go to the proposal table. And that's when you talk with the advisers and you have your parents' signature and making sure that your parents are okay that you learn about this topic

and you go through it and you discuss what you'll be doing um... and make sure that you have a well-established plan for the project.

Here the student describes the collaborative nature of the learning process that has the student and the driving force and the adults in a support role.

And then, once you're proposed you start your research phase. And your research phase is pretty typical. It doesn't vary a lot from project to project. It's when you're taking your online resources and books and your learning, and you're taking notes. That's one thing that is required is you have to have notes so that they can see that you've done enough research for each project. And then you have your live source interviews and emails whatever, because live sources are an extremely valuable part of the research... process. And then once you do research you move onto the planning process and so planning is typically the shortest part of the project because that's just going through and planning what you're going to do for your written and not-written project. And that is something that is required for each project. So, making sure that- so you do some at the beginning of the year for like marking out when you want to get things done and making deadlines and then this planning phase is coming up with what you want to do. And like maybe making sketches of this thing you're going to make for your non-written or whatever depending.

The student creates the timeline with some guidelines – she is controlling the pace with advisory support.

And then after that there's the production phase [laughs] and that's when you're writing your non-written making sure that your- you also make your outline in your planning

phase for your essay or a written product depending on what it is. And so, the production phase is when you make your non-written and your written products. And then after that you have your preassessment phase which is also very short and that's when you meet with your adviser and you make sure that you have everything completed that you wanted to have done and that you are ready to assess the project. And then there's the assessment phase which is when you actually go to the table and meet with advisers and go over your project and earn the credit. (17)

Again the student speaks of the interplay between the adults working in the school and the students as a supportive partnership, rather than a hierarchical system positioning teachers who control most aspects of learning and teaching over students as passive recipients.

I have posited the previous points as large differences between PL and non-PL student experiences. To be sure, the students describe their involvement in determining the shape, path, and direction of learning very differently in these two ideas of schooling. It is predictable that the largest differences came from the culture of learning, which explored the social nature of learning and the social context of learning (as described in *Education Reimagined*, 2015). One significant consistency amongst the three schools in this study is that any agency that is granted to students is done so by the teachers or advisors. The professional adults in all three of these schools who work with students are still ultimately in charge of ensuring students make progress toward meeting graduation requirements. Perhaps the greatest, unspoken alignment in these schools is the ultimate goal of preparing students for their lives after they graduate from high school.

Students from all three schools had similar pathways and academic aspirations for their immediate futures; all but one student planned to matriculate to an academic college or university and most of those had decided on a specific academic path (i.e. business administration, environmental science, etc.). Prior to the study, I hypothesized that students would speak and describe their experience differently between the two school paradigms in regard to their sense of agency. That all students described agentic relationships with their schooling helps to frame the ways that both traditional and personalized learning schools support students to prepare for their lives after high school.

The following chapter features the voices of students and elevates their stories to exemplify the points made here. The chapter is organized by themes and the questions in the six areas shown in appendix six.

Chapter 5: Voices of the Students

In this chapter I will center the voices of students attending the personalized learning (PL) and non-personalized learning (non-PL) schools included in this study. These are the stories of experiences as told by high school seniors who are on track to graduate. The study includes 14 interviews with students in PL schools and six interviews with non-PL students. The voices of the students elucidate both strong similarities and strong contrasts in descriptions of schooling; features of PL schools as described in the literature review provide a framework for analysis of the interview data. This chapter looks at the data from the three schools in this study; a PL and non-PL school in one district and a PL school in another district from the same Midwestern state. Through this comparison the reader will see the differences between the expression of student voice and agency in these two kinds of environments (represented by three schools), and the impacts from the types of school on the students included in this study.

The questions are organized into six areas; opening, agentic experiences, inclusion of interests, socially embedded education, culture of learning, and conclusion (see Appendix two for the protocol). Each participant was asked the same set of questions in the same order. The questions were grouped into thematic areas connected to the overarching research questions. (Appendix six includes a graphic that shows the relationship between the overarching questions, the research themes and the interview questions). The balance of this chapter explores the responses of the students to these questions; each section containing several individual questions. The first few questions of the protocol containing identifiable data from individual responses is omitted from this analysis to maintain confidentiality of the participants.

This chapter uses student responses – their voices – to help illustrate the experiences of these high school seniors. Between the three schools there are consistencies and inconsistencies, and even within schools there is considerable variation in how students responded to the interview prompts. In the following section I share the findings from the interview protocol from beginning to end, showing examples of the responses as well as analysis of what students were telling me about their experience in schools.

Voices of Students by Question

In both Public PL and Charter PL, students must make a specific choice to attend a PL school instead of their default district school. There is one question in the interview protocol asking students “How did you come to attend this school (instead of some other option)?”, although the focus of analysis on responses is on the level of choice making students believed they had in that process. To be sure, the process of making a choice to attend a different school requires some level of agency and consideration of other possibilities for obtaining a high school diploma.

The personalized learning schools are referred to in the study as Public PL and Charter PL, while the traditional school is called HP High (for high-performing, a moniker that is taken up by students and staff at the school). Public PL is modeled as a four-year high school, while Charter PL is a six-year secondary school. Of the seniors attending Public PL, only two of the six students were completing their fourth year. One was a super-senior having not graduated “on time,” or in four years. This student extended a year to complete all graduation requirements. Two others had come to the school after attending HP High for some time before transitioning to Public PL.

How long have you been attending this school?

Not all Charter PL students were in that school for the entirety of the six possible years of attendance. Two of the eight interviewees only attended the traditional four high school years, one began attending in what is traditionally considered the 8th grade year, and one was a recent transfer into the area and was completing a second year at Charter PL to earn a high school diploma.

It should be noted that in the two PL schools in this study, the four-year high school structure is considered somewhat antithetical to core features of the school – that of allowing students to control the pace of learning. For students in these schools it is more acceptable, even if uncommon, to take more than four years to complete the high school graduation requirements.

All of the students in the traditional school were in their senior, or 4th year of attendance at that school. In asking the school staff for students who were on track to graduate, I may have biased the choice of the staff toward students who have demonstrated success in their high school careers (as measured by typical metrics such as grades, test scores, attendance, and behavior records), and blocked students who may have struggled in the time they had spent at the traditional school.

How did you come to attend this school instead of some other option for your schooling?

This question was intended to garner responses that demonstrated agentic voice in the process of transitioning from middle to high school, or in the case of Charter PL, the choice to attend a charter school rather than other available options. It was phrased in such a way as to

position the student as the choice-maker: “how did you come to attend,” rather than using a passive phrasing, such as “why were you enrolled in this school”.

Generally, the question elicited a common set of responses from the students from the two PL schools. Three of the Public PL students’ language use suggests they played a role in choice-making to come to HP High, “*I made the decision* [emphasis added] to come here,” (Student #1) “I felt like I would fit in pretty well. So I- So that's kind of why *I decided to come here* [emphasis added],” (3) – an indication of some level of agency or control. The third student engaged in negotiations with her parents to convince them to allow the switch from HP High to Public PL: “I asked my dad and he wasn’t on board with it... it took a while to convince him.” (6) Charter PL students, meanwhile, demonstrated through their language a higher level of agency. “*So I thought* [emphasis added] that uh, eighth grade year *I'd give this a try* [emphasis added]” (15).

Most of the PL students indicated some level of choice in the decision to attend their school. However, more than half (eight of 14) of the students in PL schools posed the choice as completely theirs: “I had been looking at this school since... seventh grade, so I had two years to... decide what high school I was going to go to” (16), while the other PL students indicated the choice to attend a PL school was influenced by family or friends: “I decided [to] talk to my parents and we decided to try [Public PL] for a semester” (2). Charter PL students were more clearly agentic in their choice to attend, with six of eight students talking about the decision as entirely theirs. Only two of the Public PL students talked about the choice as theirs alone (see first quotes in the previous paragraph).

One concept that is often mentioned by administrators and leaders in the PL schools in this study is how the learning is relevant to students as individuals (Interviews 4 and 19), and that relevance was a contributing factor in the choice of schools. "I have more freedom to... learn how I wanted to learn." (3) Seven of the students that referred to relevancy in the decision making also demonstrated strong agency in the choice of what school to attend "I can do projects that I am personally invested in," (1) and "[Coming to Charter PL] broadened what I like now and [opened] my mind to other possibilities." (16)

Many HP High students related that they had not considered other options: "It's just where the district lines were in place for where I live." (7) "I was just following I guess the traditional path of public school." (10) These two examples suggest that these students did not consider themselves to be agentic actors in the process of choosing a high school to attend; the transition from middle to high school was preordained, chosen by some other authority, or there was no consideration of options. Four of the six HP High students did not consider other options. One of the two who did think about attending another school compared a local private school and Public PL to HP High, "if I were to go to [the private school] I wouldn't have known anyone whereas like all my friends are going to [HP High] and if I went to [Public PL], I don't really like those kids". (11) The decision to come to HP High was related to connections with peers. The other student who considered another option also centered reasoning on relationships: "My dad asked me once if I had wanted to go to [the private school]. But all my friends from middle school are going here so it was kind of I was without a question like I wanted to go [to HP High]." (9)

Those HP High students who did indicate some level of consideration for other options phrased the choice as a matter of interpersonal interest; they wanted to be in a school with the students they knew, or in environments they were accustomed to: “I chose this school as opposed to like [Public PL] or opting out just 'cause uh, I really like the high school like the community [where I live] as well.” (8)

Compared to the responses from HP High, students at the two PL schools in the study were far less likely to attribute their school choice to interpersonal relationships (two of 14 students from the PL schools). “I’m actually neighbors with one of the founding advisors here and am good friends with her kids, so... I’ve always... heard a lot about [Charter PL].” (15) Students in the PL schools opted into these schools most often for reasons of learning or fit with the type of schooling they prefer.

Describe your school to me; how would you talk about your school to someone thinking about coming to school there?

The intent of this question was to help make a connection between the participant and the interviewer through engaging in talk about a familiar topic, something that the student could consider and answer easily. The two most common descriptors students in the two PL schools used are project-based and tailoring to individual needs. In their responses, PL students provided more details about the learning experience than their legacy school counterparts. Generally, in their descriptions PL students talked about how they interacted with learning, HP High students talked about how they interacted with other students.

The students in PL schools often spoke about the learning process, describing how they progressed toward graduation through project-based learning (ten of 14). “I would most likely

emphasize... how project-based learning goes hand in hand with the required curriculum.” (18)

Eight of the ten students who described their school as a project-based learning environment also described how the school tailors learning to interests and passions of the individual students. “We do projects [for] learning concepts that we need and [for] pieces of work that we produce [to make progress toward graduation].” (3) Here the student connects project-based learning with student choice in determining the content of learning. “It’s more... project based... do what you want, do what you’re interested in...” (1) Examined another way, 13 of 14 PL students interviewed spoke about student voice in determining the content of learning:

...it is project based learning and democratic learning, so the teacher student balance isn't so... heavy on the teacher's side... they are still instructing us, but it's more like giving us a base level of knowledge of different topics and then giving us the tools to learn more about what we want to learn. (2)

Students in the PL schools are expected to *use* the knowledge they gain, whereas students in non-PL schools are generally expected to show they have gained the knowledge teachers provide.

The HP High students I interviewed seemed genuinely proud about the school. Participants cited high achievement, an accepting culture, and the ability to follow career and academic interests because of the size of the school. As described in the school profile above, HP High is a high-performing school, winning awards for academic achievement and improvement. That 70% of graduates matriculate to a four-year university is another metric that demonstrates the rigorous academic level and outcome expectations of the school and the community. These characteristics are a source of pride for students that I interviewed: “we

have a pretty good academic record like um, I know a bunch of people who take AP classes... the general academic atmosphere is pretty good.” (13)

Along with the academic atmosphere, the interpersonal climate supports students according to all of the students who participated in the study. Some spoke specifically about the idea of support: “[HP high] is... a really supportive school. I believe the students and the faculty are great here.” (8) Others used language suggesting a more personal support: “. “And everybody here is like pretty friendly and stuff so it's a lot of fun,” (9) or “I feel like anybody could find themselves being happy here.” (10)

For the HP High students interviewed, a component of finding a place at the school has to do with the wide variety of academic and career pathways available. The ability to take courses that matched with interests is an important characteristic for HP High students: “there are a lot of people with their own interests and um, different groups of people that you can jump around to and there's a lot of learning opportunities here and a lot of opportunities to engage in what you're um, passionate about.” (8) Another student believed that the size of the school affords opportunities not available in other schools, “compared to other schools I feel like it's like relatively big but um we have a lot of cool classes ... so I was able to take a bunch of classes ... that I know some my friends from other schools that didn't have exposure to.” (9)

The students I interviewed from HP High all describe a positive, enriching experience at their school and in the context of this question, would recommend this school to other students as a place to find a supportive group or community. An important caveat concerns the relative lack of diversity, both in terms of the demographics at the school, but also in the data set available to me in this study. The students who participated in this study were on track to

graduate and were considered to be successful in their high school careers. Missing are the voices of students who were not on track to graduate, or who may not have had a positive experience in school.

Agentic Experiences

Tell me about how you decided what to learn about in high school; what classes did you take, what options did you decide from, how did you know what you wanted/decided to take or learn?

Seen in the responses from students in both traditional and personalized learning schools in this study, learners began to experience an increased level of agency and autonomy as they enter high school. In more traditional schools this is often manifested in the ability to choose classes and extra-curricular activities. In PL schools, however, this increased agency is in the breadth of choice making; PL students make daily choices about their learning experience. By asking this question of high school seniors I wanted to learn about their perceptions of the level of agency through how they answered this question.

Similar to HP High students, participants from Public and Charter PL indicated they chose what to learn about through a filter of their personal interests. HP High students chose classes that they thought fit with their interests, constrained by systemic requirements to accumulate credits in certain required classes. PL students chose learning experiences, project topics, and/or learning partners based on their interests and passions. The choices that students make in PL schools relate to their day-to-day learning activities, while choices at HP High determined the course of learning for the semester or year. In the following quote, the student lays out three influences on the topics of learning: student's personal interests, relevancy to the individual or group, then graduation requirements.

...you don't know what you want to jump into because you think [it will provide what you need to] graduate... It's not about the... stuff you check off towards graduation. It's about the class and [what] you get from it. I always try to pick something that I think is going to interest me... that might lead me in a new direction... I really – love this school because [there are] so many options and it's not just here's science class here's social studies. It's what's happening today and what are you guys interested in... they will sit down and be like listen, this was the plan for this class to talk about government but honestly, um, I can see the polling in here isn't that great for this lesson. What would you guys want to learn about? And they tailor it to what we wanna learn about instead of, I have this planned curriculum we're gonna do... this and you're going to get all of this from it. It's ... what's happening today. What's most relevant. What's going to affect you in the future that they're making decisions on. And how can we tailor you getting progress toward your graduation? (1)

In this quote we see another difference between the learning requirements in the PL and non-PL schools in this study. The phrase “instead of, I have this planned curriculum” shows the student sees the difference between preplanned and non-flexible learning tasks and a more open set of learning experiences that are based in the individual student interests. That the students in these PL schools had many options was evident in the responses; more than ¾ of the responses referenced the multitudinous options, whereas only half of the HP High students spoke about available options. “You can try a lot of new stuff and seeing what you like... and then choose the things you want to pursue.” (2) At Public PL, students took classes and then

choose from a variety of options in those courses. At Charter PL, meanwhile, students chose topics of learning for their projects. “It’s really up to the student to decide.” (15)

One student described how she ensured she met requirements to make progress toward graduation, meeting expectations set for students to demonstrate learning:

So we do have a core areas of subject chart that covers all of the areas and so that’s a big thing because in middle school it doesn’t matter quite so much. But once you hit high school like that’s the stuff that can be going on your transcript, so you really got to look at that. Make sure that you’re covering all of the areas since you don’t have the designated classes for it. And so like one thing I try to do is I make my original academic report at the beginning of year saying like what projects I want to do and that’s a big thing. Um, for just like organizing everything and seeing everything and uh, how many credits you have proposed and if you have enough. Um, and so going through and making sure that I cover the areas I have to. So like one year I might realize that Oh, I don’t have any science credit for example so I got to either find a project that I can do on that and like get rid of one that I already have enough credit in or make sure that I do enough to make up for it next year. (17)

Students are provided the information and agency to create their own paths, knowing that they must hit specific learning targets and demonstrations of learning in order to earn a high school diploma.

Interests drive learning in the Public and Charter PL, and those interest-based projects can lead to discovery of other interests:

Well, I have my interests, and so I first went off that. And then during the projects you have... subtopics. And..., while I research... I find that there's a lot more ideas to come from that – to sprout from the project. I think you... take your projects and you learn from them and then you think well I could take one of the subtopics that I learned about and... turn that into a huge project. (16)

This aspect of personalized learning helps students learn about themselves as learners, what topics are areas of passion and interest, and the learning paths they want to take; “In the beginning [I] didn't have a theme at all...I'm going to do just whatever I want. But as I've [been at Charter PL] I've realized... what I like to do.” (20)

A few students in Charter PL also said that they did not know what they wanted to learn when they started at the school. “My first couple of years coming here I did... silly projects... You do what you are interested in at the time. That kind of led me to being interested in [my current career path].” (23) Through the exploration of their interests as they are connected to the learning standards they had to meet, students discovered learning interests, and eventually career pathways.

Asking about how students decided what to learn brought to light a clear separation between HP High and the two PL schools. Learning standards take different shapes in PL and traditional schools in this study. Charter PL students connected projects to learning standards they were required to meet in order to graduate. “We don't have um, like traditional classes where it's um, teacher in front of students.” (15) Public PL students, meanwhile, selected classes, “and they'll each come with a little description of what they offer as far as... graduation requirements...” (2) Similar to a comment in a previous question, the grain size of graduation

requirements is different in Public PL compared to HP High. HP High uses classes as the unit of measure – credits – to show completion of graduation requirements. Both Charter and Public PL use individual skill demonstration, typically through projects, as the unit of measure to show progress toward meeting graduation requirements.

All student participants from HP High spoke about personal interests and the connection to specific classes that were offered at the school. Some referenced academic interest, as seen in interview #8: “I’ve always been really interested in math so I’ve taken a lot of... higher level math classes. I found a passion with physics so I decided to take AP physics.” Others chose specific classes because of an interest in a particular career path: “I wanted to become a physical therapist. I took... more medical classes.” (7)

At the same time most (five of six) HP High students referenced the ability to choose their classes as high school seniors in contrast to the ability to choose in previous grades: “all my classes like about 90 percent of them were already chosen for me. ...when I went to sophomore year I had... a couple of spaces... It wasn’t until junior year where...you could choose what kind of ... class you wanted.” (11) Non-PL students interviewed spoke about their experience with increased levels of agency and autonomy as they progressed through high school, manifested in the ability to choose classes and extra-curricular activities. “... freshman year you have about two semester... blocks worth of... choice - classes and it just gets larger the... more you go through the high school and it's really what you make of it.” (8)

Looking for evidence of active or passive voice being used by the participants, I found that all of the students, when speaking about their current choices used an active voice: “I... chose those because I’m... interested in learning... at a fast pace,” (10) as opposed to a more

passive voice when talking about required classes in previous years: “in order to graduate you need a certain amount of credits and then you need to take a certain class...” (13) This change between agentic and non-agentic voice appeared to suggest there may be very little choice available to HP High students in their early years of high school as they complete their mandated coursework.

Personal interest also played a role in the choice of classes participants made in their senior year. “I play volleyball so I knew I wanted to continue with that... after high school.” (9) At the same time, one student put personal interest, academic passion and thoughts about a future career together to help influence the classes that would be most beneficial: “...I really did think about what I wanted to pursue in the future...my senior schedule most of it is...something I’m interested in, something I like.” (13)

The seniors from HP High who participated in the study demonstrated significant agency in choosing what to learn about in their last year of high school. This choice is situated in choosing what classes to take. At HP High, a large suburban comprehensive high school, there is a wide variety of classes and academic pathways that allow students, over the four years of high school, to engage in coursework that is related to their interests, passions, and potential career paths.

Tell me about your most and least favorite learning experiences in high school. What made it your favorite? Why was that your least favorite?

This is the second of three questions to help me learn about the extent to which some students in the chosen schools have agency in their learning (see appendix six to see the relationship between interview questions, themes, and research questions). While the previous

question has a more direct connection to agency, the descriptions of making a choice are set in the context of agency. Asking about most and least favorite experience presents another opportunity for participants to speak about their learning and may contain evidence of agentic experiences as demonstrated by projecting themselves as principal actors.

PL students connected agency, interest, voice, and relevancy to either their most or least favorite learning experiences more often than their HP High peers. Students in all three schools spoke about learning new ideas or information as either the most or least favorite aspect of their schooling, although that was more apparent in HP High and Public PL than in Charter PL. A stark contrast between the two PL schools and HP High is seen in the area of voice and relevancy. While not every student in PL schools mentioned voice or described the concept in their responses, none of the students in HP High did, and only one at that school mentioned relevancy in connection with their least favorite experience.

Taken together, the students from the two PL schools said that their favorite learning experiences fell into three categories: those in which they had agency in determining the topic; the topic was something that was connected to an interest of theirs; or those which allowed their voice to be central to the final product of the learning. The connection between favorite learning and agency, voice and interest is clear. This student's response combines all three:

My favorite things that I think I've done at [my high school] so far is getting to work with [the school] nurse. We're... talking to various to health teachers in [the local school district] and we're planning on writing a... kind of a mock curriculum for what a sex ed class might look like if it was implemented here. That's something really neat that I wouldn't have got to do at [my old high school]. (18)

Two students in each of the three schools connected their least favorite learning experience to a lack of agency: “Maybe that’s why it was my least favorite, because I didn’t want to do it. It wasn’t something that I got to choose.” (21) This Charter PL student cited an assignment in his previous, traditional school as his least favorite: “I had to write an essay for my English class. And I like- I love English... but I didn’t particularly find any reason for writing this essay um, other than it was required...” (18) This HP High student’s least favorite experience was not learning, per se, but a lack of agency in choosing how to engage in learning: “Our math classes are... set up to work as a team and like you do a lot of team stuff but sometimes... the team doesn’t work out and then... I’m the one that does all the work.” (7) Another HP High student related her least favorite to the inability to choose the topic. “I don’t like writing and writing and learning and reading a bunch of stuff that I wouldn’t choose for myself. Everything is just chosen...” (11) Overall, 30% of all interviewees who connected their least favorite learning experience to a lack of agency.

All of the students from HP High responded with description of *classes*, rather than specific learning experiences: “I really like... the optional classes. ...You get to pick what you do.” (7) This occurred both for most favorite and least favorite experiences: “I’ve gotten like three different kinds of teachers [I did not like] and it just didn’t make what I was learning fun.” (11) Another interesting aspect of what determines the students’ least favorite classes is seen in this quote, that of perceived “fun”. “...it was really difficult to actually learn the material that the teacher had given me; they weren’t that open, or they just seemed bored, or they were just reading off their papers trying to comprehend what was actually going on.” (13) This response points to yet another factor in making a course the respondents’ least favorite: the lack of

agency in choosing what was being learned. In this quote, the student pointed out that *teacher* did not seem to have the agency to determine what was being learned. For this student, the teacher's lack of ability to choose the learning topic made it less appealing than in other classes where the student felt there was more choice.

Half of the respondents from HP High connected their least favorite learning experience, or their least favorite class, to not learning as much as she or he wanted to learn: "...it was a struggle having to learn the material by ourselves with only a textbook and no one to really reflect our ideas off of to see if they were right or not." (8) Another student had a similar perspective, "Well I really don't like English classes... A lot of it seemed like repetitive... So I really didn't like that and it just seemed like a lot of busy work..." (9)

Overall, in this question the HP High respondents said the learning experiences they enjoyed most were connected to their interests (the classes they took) and how much they learned. Meanwhile, the experiences that resonated least were connected to a lack of learning, reduced or no agency in the content or what was being learned, or poor interpersonal connections with the teacher. As will be seen later in this study, that the students from HP High consistently identified "learning experience" with classes, such as English, mathematics, or band, which was different than how students from the Personalized Learning Schools spoke about learning experiences.

What was your involvement in choosing what you learned?

At HP High students chose classes, and the content of the classes is determined by the teachers or the school. In their conversations, students connected learning experiences to classes taken, and generally did not equate learning to specific topics, projects, lessons, or

individual learning experiences. Contrast this finding with how students at Charter and Public PL speak about learning and how they are involved in deciding what, how, when, and where to learn. Students from the two PL schools said they receive advice from teachers or advisors (nine of 14), students decide what to learn (13 of 14) and gave specific examples of projects or learning experiences (seven of 14).

Anticipating students from Public and Charter PL would describe their learning experiences as self-directed, I did not expect students from these two schools to talk about how adults in the schools helped them make learning decisions: "...I usually talk to the teacher and I'm like hey..., is there a way I can do- like talk about this issue and still find a way to incorporate these elements into it" (6) The student advocates for a specific learning activity and the teacher/advisor suggests ways to connect student interests to related requirements for credits or progression toward meeting graduation standards.

...there's a small influence of the advisors and stuff and what they do is they really help mold it into what a successful project can be. But like you come up with ideas and you set your pace for how fast you want to work and you make your deadlines like it's very much you planning out what you're going to do. And so your advisors are there to assist you when needed. (17)

Students at Public PL work with the teachers/advisors and receive some direction and guidance. "We sit down with [the] person [who] advises you and like to make sure you are on task." (1)

Students in these two PL schools decided what they are going to learn at any given moment. All of the PL students used language that shows they control the content of learning. Of the interviewed students learning in the traditional model, zero said or intimated they

decide what to learn, other than through the process of choosing which class to take. “I feel like I've had a lot of options and I chose some classes that interested me.” (8)

All but one of the students from HP High referenced the ability to choose classes as the main opportunity for involvement and self-direction in deciding what to learn. “I chose classes that...interests me,” (7) and “I feel like here we have a lot of leeway to choose our classes” (8) both demonstrate this avenue for agency. At the same time, students indicated that the classes they chose were interesting to them because of what they thought they would be learning in those classes: “once you're in the classes I mean you know [what] you signed up for.” (10) Alternately, one student pointed out that the ability to choose classes based on the student’s intended career provides a certain level of agency: “I feel like there's a lot of options at [HP High] that can make you find out who you are and the teachers here are really helpful with like trying to pursue you to like what future you want...” (13)

The grain size of choice for HP High students was, for the most part, at the class or course level. This student however also indicated some level of choice within the classes: “I'm in creative writing this year. And it's an amazing class. In that class you can write about whatever you want, and you can read about whatever you want.” (11) It is notable that in-the-context-of-class choices exist within elective courses, whereas core or required classes like mathematics, science, language arts and social studies provided less latitude, as seen in this exchange:

Interviewer: OK. So then thinking about inside of those [required] classes do you have much latitude to decide what... you're going to be learning?

Student #7: No, it's pretty structured.

Another interviewee also pointed to the structured nature of topics for learning: “it's kind of like you just learn whatever [the teachers] taught you..., you couldn't really go off on your own.”(9)

In the first few interviews at HP High, students would not include specific learning experiences. I decided to prompt students who did not give examples to learn how they spoke about details of their experiences in school. Only two of the six students from HP High described specific learning examples, even when prompted.

Interviewer: ... within individual... classes. are you able to... choose... topics that interest you within them?

Student #8: Within... a lot of our social studies classes... there are projects about certain... time periods and within that you can choose... certain aspects you want to focus.... We have a... class which is about US history from like maybe late 1800's up until present day. And... within that timeframe frame we were able to choose like some sort of human rights... group that we wanted to explain and like how they gain their rights like whether it was... people of color, gender equality, LGBTQ+ equality. And you can choose to go with that and make your own presentation for that and that's really cool I think.

This student expressed his enjoyment for the opportunity to choose an area of interest within the context of the class he chose to take. The following example from another student also shows that when she connects to an extra-curricular activity experience to a writing task she enjoys the project:

Interviewer: [can you] give a specific example like what is your involvement in choosing what you learn within a class?

Student #11: I'm in creative writing this year. And it's an amazing class. In that class you can write about whatever you want and you can read about whatever you want. And I really like that because we- sure, we do get like a topic, like we just finished our snapshot paragraph, and we could choose about like any picture that we wanted. And so, I chose about one of my [club] memories...

Meanwhile, half of the students from the two PL schools made connections between this question and a specific project or learning experience without prompting from the interviewer. "...when I did my coffee project I went to all the coffee shops downtown and I would just spend an afternoon and take I would take notes." (20) This finding reinforces the idea that in the PL schools in this study 'learning' is associated with a specific instance that is recalled in detail by students, while students in the non-PL school do not make the same connection.

What was your involvement in setting the pace or place of learning?

This question was part of the interview to elicit responses from the participants in a way that would allow me to better gauge the students' perceptions of their agency. As the ability to choose the pace of learning or the place in which the students learn is a central feature of PL schools, I anticipated a significant difference between responses in the traditional setting and the PL schools in the study.

All of the students from Charter and Public PL who responded to this prompt said that students control the pace: "the pace is all your own." (1) Participants also indicated that the

responsibility for progress was their responsibility, although teachers or advisors give general guidelines and suggestions, and would intervene if needed. "...your teacher will say the class terms are nine weeks...if you don't get it done you can carry it into [the next nine weeks]." (3)

The grain size of learning in HP High and the two PL schools is different – often characterized as either classes at HP High, or projects in the two PL schools. At the same time, the time span of expected completion of work is different. Students in HP High completed daily or weekly assignments, working toward semester grades and credits necessary for graduation. Students in both Public and Charter PL complete work on a longer timeline – projects, the grain size of learning experiences spans several weeks and may contain several demonstrations of skill mastery, which is the currency used to progress toward high school graduation in these PL schools. The control of the pace of work at HP High is controlled by teachers with due dates. With a high turnover of assignments in the traditional model, due dates are more frequent and fall into a necessary time framework. In Charter PL and Public PL the project timelines are much longer, and therefore afford more flexibility for students to control the pace of their work.

While students in the two PL schools did indicate they had control of the pace of their work, most of the participants said they consulted their teachers or advisors throughout the course of a project:

You obviously have a due date and that is going to be at the end of the quarter.

Whatever... the goal is that you're trying to get it done before then and... you could always go back if you want to get it to [a higher standard] you can always go back and work it some more and then turn it back into the teacher but that's between that student and that teacher. (12)

At Charter PL students develop the ability to control the pace of learning over time. In this response the student indicates a development of agency manifested in the rate work is accomplished:

...it's easier to bring new students in and have this structure for them and then after they learn the structure to be able to like break out of that. So definitely the beginning like we had the first project that was totally like guided. We were told what to do and then we were supposed to replicate that project with a different topic. And like there is a specific structure for the projects... they tell you like you should do six week projects throughout the year. But as you get older maybe or like you've been here for longer you can be like well I think I work better doing all my projects year long. (21)

Control of the pace of learning is delegated to the students as they demonstrate success in time management. Similarly, over time students are allowed by the staff to have more agency in determining where they will learn.

The general layout of both PL learning environments was an open-concept lab where students have individual workspaces, somewhat akin to cubicles in an office. There are also large open spaces where larger groups of students can meet, or school-wide meetings are conducted. Both schools provide a variety of seating; working at individual office-style desks, in quiet rooms, tables where two or three students can collaborate, and other flexible seating options. Only about a third of the students in the two PL schools remarked that they have control of where the learning happens, although the general environment of both schools points to more choices in where to conduct their work than at HP High where students moved

from class to class, school desk to school desk with very little latitude for students to choose where to engage in learning tasks.

No HP High student expressed their control of the pace and place of learning. At the same time, each of the HP High students did mention some form of flexibility within the constraints of their daily and class schedules, either with due dates, taken here as a proxy for pace: “some teachers are lenient about like deadline... But other teachers are like so like strict ... it needs to be on time otherwise you're get ... docked a percentage.” (7) One student also communicated a lack of agency on the part of teachers, an interesting perception that decision-making power is not in the hands of the teachers.

Each of the students interviewed at HP High said that the teachers tell the students when assignments are due, and the pace of the work is not a student-driven aspect of their learning. To be more precise, the teachers set the pace, and variation from that pace has consequences. If work is submitted later, “...teachers are like so like strict and like it needs to be on time otherwise you'll get like docked a percentage.” (7) While there is a potential for negative impact because of falling off the pace, one participant recognized that it is possible to exceed the standard pace: “Choosing the pace is not really an option for the students. Some kids can stay up to pace and even in a sense ahead of pace.” (8)

Another aspect of pace variability is in mitigating circumstances recognized by teachers. “If you had like a big game or you were up late or something you could say ... I need a little bit more time on this... and [the teacher would] give you more time.” (9) Another student also saw some flexibility, but only when the student advocated for an exception to the rigid time frame for work to be completed: “if you're talking about due dates that definitely is like it's pretty set

in stone but if you talk with the teacher and like they recognize that you have some kind of conflict or something they're like usually very accommodating.” (10)

What was your role in determining how your learning would be assessed?

The final component of learning about student perception of agency, this question about assessment seeks to gauge participants’ position in determining the value of their work in comparison to the academic and learning standards to which they are being held responsible. Contrasting with the responses from HP High, students in Public PL and Charter PL described multiple methods for assessing their work, a focus on skill development, use of rubrics to communicate outcome expectations, and assessment of work as a formative process that allows students to iterate and rework projects to improve the final product, achieve a higher level of skill, or develop interests. Interestingly, all of the HP High students spoke about assessment as a summative activity which occurred at the end of a learning experience, such as the end of a unit, a semester, or course final exam.

Flexibility with how students demonstrate mastery of a concept or skill can take many forms in the PL schools in the study:

There's multiple different ways that you can achieve different artifacts and if one way is not working for you like I'm having troubles reading literature right now and [I'd rather] do this in like a short story, short like essay... of... my understanding of the book so far, or I wanna like illustrate in a like comic of how this story is going and my point of view..., that's totally acceptable and [teachers] will help you figure out a plan for it and kind of go with you on the steps you need to take in that version to achieve all of the goals of the [project]. (1)

Students have a voice in the ways that they intend to show progress toward the learning goals; they proposed ideas to the teacher/advisors. “When it comes to assessment... oftentimes we present things to the teachers and... we have to give them a good enough reason for them to be like yeah you can go ahead and do that.” (6) Assessment in PL schools has become a method for the teachers or advisors both to determine the students’ progress toward mastery of skills as well as an opportunity to teach the students how to improve their expertise in the learning process.

Learning experience assessments at HP High were described by participants as single events, typically some type of exam or test. In both PL schools, demonstrating mastery is an iterative process; students make progress toward mastery with submission of projects which receive formative feedback from teachers and advisors. The following response from a student at Charter PL describes the assessment process:

So we have a PLP which is a personalized learning plan, which has like a rubric on it. And after you're... officially done with a project you have to assess it. And at your assessment [there are] two advisers. One adviser is your advisor and then another one is another adviser from another advisory. So like it could be an art project or another essay or like a written out thing. And... you have sort of just a chill conversation with the advisers and you talk about what went well and what didn't go well and then you go to the rubric and you mark down how well you thought you did. And you talk with the advisers and you mark on the rubric what like- not really [a] percentage but where on the graph you should put the mark. So one of them is like project process. So that's like processing everything and showing them that you processed your project basically. And so like

there's a graph and [a high mark] would be like you did everything really well and [a low mark] is like you didn't do anything. (16)

As described by this Public PL student, the rubric and assessment process afford the opportunity to improve the work to meet a higher level of mastery: “You have developing, proficient, exemplary, and... emerging. [If your work has] a couple areas that are emerging a couple in developing one area and uh, proficiency... then, It's encouraged to go back and work on them.” (12) To be sure, the advisor has the authority in this situation. However, in this school the adults in the system have asked the students to participate in the process of assessing learning progress. While not expressing complete agency to determine one’s grades, students do participate in those determinations of learning at a much greater level than is the case at HP High according to students. Additionally, students are able to work more on the project to meet a higher standard if they and the advisor or teacher agree that such changes are warranted.

The concept of rubrics as a methodology to determine the quality of work is mentioned by 11 PL students, compared to only two HP High students. The use of rubrics to assess work is not necessarily a reflection of student voice; rubrics are often pre-determined by the instructional staff and provided to the students, as is the case in HP High.

Two HP High students referenced rubrics as the tool that some of their teachers employed for determining grades on end-of-unit assessments.

Interviewer: Do you get much choice in what that looks like in terms of how you're assessed for your learning?

Student #7: No it's a rubric. So you have to base off like ... a project like it gives you like [a] four would be which is a hundred percent and you have to like meet those requirements to get that score.

In this scenario, students were given the rubric and could therefore choose which level she or he would work toward. The choice here is not about how the learning would be assessed, but in the quality of the work that would be submitted.

The other HP High student making reference to a rubric said “[The teacher will] hand out a rubric and it's going to be a presentation you kind of pick what's going to be on it.” (10) While the concept of a rubric and how it is used to assess the quality of work seems well understood, there is also an indication of a level of choice for assessment; students can choose the level of quality of the work that corresponds with her or his desired grade or can choose the type of work that will be assessed. This is consistent with what other HP High students experienced; “Some people made posters... some people made presentations.” (9) The agency experienced by these students was in choosing whether to create an artifact or demonstrate learning to a class group, or it was in deciding the level of quality, and ostensibly level of effort to put into the summative artifact of learning.

Four HP High students referenced project-based assignments in their classes. These projects had some level of student choice built in; “...you kind of pick what’s going to be on it... there’s freedom in different ways for different projects...” (10) Some instances allow for the choice of topic, “so I chose the topic of – so you get to decide...” (7) The agency experienced by these students is limited to within the scope of the project as an assignment, however, as described by Student #13: “The teachers will just say hey after this unit we’re going to do a

project...” Another student clearly preferred tests over projects: “I think one really good way to kind of know where you're at the end of a unit is a test...” (8)

Inclusion of Interests

To what extent did what the teachers ask you to learn match with that you wanted to learn?

Much like the previous questions exploring agency, responses to this question were generally situated by the HP High students in choosing what classes they took, and by Public and Charter PL students as the projects they chose. A marked difference between the traditional and PL settings can be seen in the use of a passive voice as seen in an increased use of “you” to depict a person (all six HP High students), whereas responses from the PL schools have a more active voice and using “I” and centering themselves as actors in their responses (11 students).

All PL students said or intimated that there is a match between what students want to learn and what they were engaged in learning. “I find that most like 98% of the classes are driven by... what’s popular and what’s... more interesting to [students].” (1) The responses to this question illustrated a significant difference between HP High and PL students: student choice as the driver of content, while the outcome standards in all three schools are aligned to the Common Core Standards.

The students from these two PL schools also described a flexibility in choosing the topic or content. “If [my advisor] pushed [me] to try... something that I don't particularly care for and then I had a different idea a lot of times we'll try and kind of um, make those ideas into [a project]” (15). This type of interaction between students and teachers or advisors is common; it is a process of negotiation between student and teacher or advisor to ensure students’

interests are central to projects that build skills needed to progress toward high school graduation. "...at the beginning of choosing a project you get meeting times with your adviser. And so you can talk to them and see if they would be okay with you doing the project" (16)

Students attending HP high most often positioned the teacher as the person who chooses what is taught in classes. When asked "to what extent do the teachers ask you about your interests" one participant said "I mean, they didn't really ask..." (7) and "it wasn't necessarily like what you wanted to learn about." (9) At the same time, all but one of the students alluded to class choice as the granularity of agency for choosing what to learn; "...choosing the class is what aligns with your interests..." (8) However, half of the responses suggest that teachers themselves do not make those decisions. Instead, some other level of the school organization determines the content in the classes: "They have to teach the material that they're given..." (7) and "...it's a set curriculum." (8) "...a class like [Advanced Placement Literature and Composition] ... or even like a science or math class it's basically chosen for you." (11)

Another striking idea that some HP high students included was their lack of ability to make effective choices in what they learn. "...being a high schooler I don't always know a lot about the subject area." (8) Or the student may not know what her or his interests are, "...with most of the classes I'm taking right now I don't know what I want to learn." (13) While HP High students did not describe themselves as decision makers for what they were learning outside of the choice of classes, two students did mention some level of ability to provide input on learning or content.

Describe the similarities and differences between things you are interested in your life outside of school and those things you learned as part of school.

The second question in this section examining the inclusion of interests directly asks the students to describe connections between ostensibly self-determined interests and learning experiences they are expected to engage in while in school. As described in the literature review, interest plays a significant role in motivation, and by extension, learning (Krapp, 2007). This concept seems to resonate with students; a student from Public PL did recognize the potential that interests could play in learning. “Well I feel like if you're- if you're doing something that you're interested in outside of school and you're crossing it over to when you're in school you're going to be a lot more focused in school; you're going to like school a lot more.” (14)

At Public PL students indicate a very strong connection between outside and inside interests; one often informs and influences the other. “School has been like a very good um, experimental space for me where I can figure out what I want and what I'm interested in. So then I bring that um, you know out of my school life.” (2) Three students from HP High brought up the idea of clubs or after school activities in their responses to this question, however these out of school spheres of learning are not directly connected with formal schooling. In this example, the student made an informal connection between outside of school interests and what she was learning:

I keep bringing up the exercise science... stuff like that that kind of connects to just like the whole sports world because... you can, I don't know, kind of see the similarities

between what they're teaching you and how you could use it in a sport or how it would impact you in a game. (9)

As discussed in the review of literature, many PL schools integrate spheres of learning – areas of interest and self-initiated learning outside of school and the formalized learning expectations of compulsory schooling - as a design feature of the school (Ito, Gutiérrez, Livingstone, Penuel, Rhodes, Salor, et al., 2013). Students interviewed in the two schools in this study see the connection: “Coming to school... was like... I'm doing clubs... it just felt like I was in a club. And I was getting something out of it and I was learning things that I didn't know before.” (6) In the following response, the student relayed how Public PL expects students to bring their personal interests, discourses, and ways of being to school:

I'd say that [outside interest] plays a big part in it because when you come to school here you're not just a student. We, we want your personality, your charisma, your.... everything. We don't just want a student who comes here and learns. We want someone who comes here and contributes to the community in a positive way and it really brings who they are, and we help them from like the middle schooler who doesn't really know who they are, to help make them shine and successful in the real world. (1)

Also interesting in this quote, the student casts himself as part of the system (“we [emphasis added] want your personality...”).

Two-thirds of the students from HP High specifically stated there is no connection between school (situational) and home (undivided) interests. One response directly refuted a connection: “I would say they’re pretty different”. (7) Another participant gave a specific example of an interest that is not connected to schoolwork, “I really do have like a fascination

for physics. I think it's really cool to think about how things happen... I think being able to learn more about that would be really cool... [our] classes certainly never covered that.” (8)

To provide a counterpoint, and to making a connection to an earlier theme, one HP High student made a connection between extracurricular activities, interests, and expected learning in classes. “We have photo club. I'm in photography right now that's linked. I love science. I take astronomy this year and it kind of falls with like a[n] Astronomy Club.” (13) Another student makes connections between what she is learning and her activities outside of the classroom: “I don't know, [I] kind of see the similarities between what they're teaching you and how you could use it in a sport or how it would impact you in a game.” (9)

Socially Embedded Education

Tell me about the culture of your school; who did you learn from, who did you learn with, and who did you help learn?

This question examines one part of socially embedded education, the social *nature* of learning. There were two significant findings from this question in the PL schools; first, there is less emphasis in the separation between grade levels in these two PL schools compared to HP High, and a larger role for students to support the learning of their peers. To be sure, students in HP High sometimes worked with students from other grade levels, and some HP High students spoke about tutoring their classmates. The extent to which these students at HP High spoke about helping other students was far less than at the two PL schools in this study (two of six HP High students mentioned students learning from other students, compared to 13 of 14 of students from Public and Charter PL).

A significant structural difference between the PL schools and HP High became clear in the conversations with the PL students. HP High, like many schools, separates students into grades that roughly correspond to the number of years students have been in school. In these systems, there is little interaction between grade levels. In the two PL schools there is a recognition of grade levels, however, students often work with and support the learning for both younger and older students. These interactions between students take many forms; mentoring, learning from, helping to learn, and partnerships on more comprehensive projects. “I’ve helped the older students before and younger students have helped me.” (17)

The overall learning culture in both Public and Charter PL is one of mutual support and learning; students and staff are involved in the learning support for others. “Most of the students are willing to... help each other when they can with... peer feedback... or working together on projects.” (14) Projects at Charter PL may have more than one collaborator, each learner working toward different aspects of the final product, seeking personalized learning outcomes while at the same time supporting each other: “me and another student right now are kind of working on designs together. I feel like everyone... helps each other out in some way.” (23) It is clear that students use their peers as their learning support resources.

This aspect of the PL school appeared integrated by design into the culture of the schools. “So if you have a question you’re encouraged to talk with them first before asking your teacher.” (3) Students are encouraged to work with each other to help solve problems or find answers to their questions. These informal interactions are common, based on the responses from students from both schools. Charter PL adds a layer of a more organized and intentional

pairing between students; the school created a mentor program in which students with more experience in the school help acclimate students who are new to the school.

All the first-year students here are mentees; they have to go to boot camp and they learn and they do... a guided project and then each mentee is paired with a mentor so you can volunteer to be a mentor. ...the advisers will reach out to you... and say hey next year would you like to be a mentor. It's typically someone in the same... gender as you and the same in the same advisory. So you have a person your first year...that is consistently there for you because they signed up to do that job like you have someone that's kinda like forced to help you. But it's also usually a really good relationship. (20)

It is clear that PL students see the learning culture of the school to be one of mutual support and interdependence with their peers. Interactions occur across grade levels, are focused on learning, are created informally and organically but stem from structural aspects of both schools that intentionally position students as learning partners with each other.

At HP High, students report that learning comes from teachers, and the teacher is the main source for instructional interactions. Learning from other students seems to be the exception at HP High, or only seen in formal tutoring, "I am a tutor for ... so I'm able to help other students" (8) or "jigsaw" activities as part of a specific unit or lesson: "...a teacher a teacher gives you what you need. Some classes that I've taken we... all read like a different book like in English class then you... present it so everyone can see what that like looks like." (7) However, there are some opportunities for students to learn from each other.

Mentioned by two of the HP High students, when groups of students struggle with an assignment they may work together to support each other: "If there is a teacher who I'm... not

learning from I'll have friends or classmates who are in the same class and... we end up studying together in school [and] outside of school.” (13) Or students exchange ideas with each other because of mutual interest: “It's just interesting to get different perspective... turning to talk to you after like oh this is kind of what I thought of that... like what did you think of this from like a new thing that we're reading.” (10)

Two of the HP High students mis-interpreted the question, using another way of thinking about the word ‘culture’, as evidenced by this interaction between the student and the interviewer:

Interviewer: Could you tell us more about the culture of your school. Who do you learn with, like who is in your classes, who do you learn from, who you help to learn?

Student #7: I'm a minority... I don't have like a lot of people... that are the same like race as I am. Um. It's kind of hard but I've gotten used to it. I mean [my] school district is primarily white.

And

Student #8: ...so at our high school... surface level doesn't seem very diverse; we're a very Caucasian population. ...You won't see a lot of racial diversity but I think when you really get into things there's a lot of diversity within the personalities of the people.

The interviewer, in subsequent interviews watched for similar interpretations of ‘culture’ in this context and was able to expound on the concept to ensure participants understood the query seeking their experiences about the learning culture in the school.

How do the things you learn inside of school connect to your life outside of school?

Beyond the connections amongst students in the learning environment is the extent to which learning is perceived to be relevant to students' interests and experiences outside of school.²¹ The connection between in and out of school interests exists largely in the club or after school activity realm for the students I interviewed at HP High. For students at the two PL schools, the connections are strong – those things they are interested in outside of school become the subject matter of the work they do as part of their educational path. “It started becoming fun. Like it just felt like I was in a club. And I was getting something out of it and I was learning things that I didn't know before.” (6) PL Student responses were thematically consistent with responses to other questions both in the area of socially embedded education and in differences between students attending PL and non-PL schools in this study.

The relationship is bidirectional; for some students the things they learn about in school become areas of passion in their lives outside of the school walls. “School has been... a very good... experimental space for me where I can figure out what I want and what I am interested in.” (2) To be sure, the school to life direction is more typical in educational settings; it is the hope of many educators I have worked with over a 20-year career in education to have their students discover an interest that came from the teacher's area of expertise.

²¹ During the analysis I found that this question was omitted in three of the 14 interviews with PL students. Reviewing the conversations with the students does not shed light on the reason for the omission, and I did not notice the gap until it would have been far too late to re-engage with the students to gather data on this question.

Connections between what is learned at HP High and student's lives happen through the context of clubs, activities or athletics. Looking at one response in its entirety, connections to clubs is clear, and the student also suggests that connections can be made through class choice.

I think for clubs and activities that you can do here definitely like help out [with relevancy] because they recognize that OK we might not be able to cover everything in these classes like here's some clubs that if you like it still like affiliated with the school so it's like you still go and get that involvement... of people that you want... But it's not necessarily always taught in classes. And you get to kind of participate something that ... you might not otherwise get to do if you were just taking like normal classes ... And of course there are courses that if you're interested in certain things can also be connected with ... your outside interests; like I'm interested in ... environmental science and there's courses here [that match my interests]. (10)

The statement "they recognize that... we might not be able to cover everything" suggests that the student sees that "they" (presumably the school) need to provide an avenue for students to pursue their interests. Similarly, another student made a connection between learning in school and skills or knowledge relevant to life outside of school: "I think like school helps us get prepared for college... We also [take] classes that teach you how to like balance a check book and all of that stuff. you're gonna need that at some point in your life." (7)

One HP High student made an interesting connection between a skill that is learned in school that helps support her work in music outside of school:

The stuff I'm learning inside a school kinda applies to what I'm learning outside of school. So [in] music like they would talk about ... your individuality needs to show in a

band but at the same time you [have] to make sure that you're not putting yourself too out there [so] that the whole band sounds like crap. And ... when I go to ... a more advanced ... music group. I'll think about the same thing... (13)

This statement demonstrates a connection between what the student is experiencing in school and what may turn out to be a lifelong pursuit. The student then contrasts the relevance of music to that of “core” classes, “when it comes to um, science or English, ... I feel like sometimes it'll improve ... to the point I can just randomly say to my mom like hey ions are like blah blah blah blah. And you know just like fun little facts like that.” (13)

What impact will your schooling have on you after you graduate?

This question seeks to gather from the participants their understanding of the longer-term relevance of their time in school. I intentionally left the wording vague, using the general idea of ‘impact’ open to the student’s interpretation. Part of my curiosity was not only their surface responses to the prompt, but also to understand the extent to which the students make connections between their work, and ostensibly learning in schools to their future plans. The one unifying idea that I heard from every HP High student is the intent to attend a college or university in the next year. This is a contrast from the interviews with students from the two PL schools; several of these students related plans for a “gap year” with one deciding on a direct transition to the workforce.

The most significant finding in the PL schools from this question comes from students relating examples of discovering interests that will persist after they graduate. “You can take what you learn in here and apply that outside which helps with college.” (17) Students in the two PL schools, much like some of the students from HP High recognized there is more than

content knowledge that is acquired as part of the schooling experience. “We really have to develop a sense of... self-motivation and that’s definitely going to help in college and beyond, because those are the skills that are going to be needed throughout life.” (22)

Another idea that was brought up by PL students is that they developed as learners and were more able to know how they learn: “I feel like It will definitely help me to figure out where I want to go in life and it has helped me trying to figure myself out and like what works for me and learning and what doesn't.” (14) And from a Charter PL student, “I’ve learned a lot here. And not just education-wise but like personal wise, like my personality and who I am and who I want to be.” (16) Education in the PL schools is intended to be more than mastery of subject areas such as English or Mathematics. It certainly is the case that teachers in non-PL schools intend for students to acquire “soft skills”; emphasis on acquiring these skills is a common thread between HP High and these two PL schools.

In two-thirds of the responses from HP High students spoke about how the features of schooling helped to prepare them for college. “...study habits ... taking hard classes and ... sports ... making sure I get my work done on time and like time management stuff, that will help me ... in college.” (9) Another student cited a significant impact; “it will have ... a big impact because I want to go to college so it's... the routine. Like taking notes. They've ... taught me to do that, and... asking for help.” (7)

Some of those connections for HP High students extended beyond what are often categorized as “soft skills” – study habits, time management, for example – connecting to interpersonal or social aspects of college life:

Coming to [HP High] will impact my post education plans because I will have developed like not within the class curriculum but just within the people here. I will have developed ... a bigger appreciation for people's differences and I'll see a lot more of that outside in the real world with a lot more diversity out there and be able to come in with a mindset of being able to appreciate people's differences rather than feel isolated. (8)

While most of the HP High students connected the soft skills they learned in high school to what they will need to know in college, one student did make a direct connection between academic skills learned in classes and what she expects to need to be able to do in order to be accepted into a university: "One of my English classes we ... sat down and [the teacher] taught us how to write ... a college [application essay] and then we had to write one and [the teacher would] give us feedback." (7)

How were the problems and issues you learned about in school connected to your community?

Espoused by some personalized learning models, how the learning in school is related to local (to the school) concerns, or the social *context* of learning may be a pathway for students to understand how what they are working on in school is relevant to their lives outside of school. This feature of PL school in the literature is highlighted in both of the PL schools included in this study; to compare student schooling experiences between PL and non-PL schools I included this question for HP High participants as well as for their peers in the PL schools studied. Students in Charter and Public PL brought up two common ideas in their responses to this question. There are multiple opportunities to engage in projects which are in some way connected to their local community, and that community-connected learning is

experiential. Generally, HP High students indicated there is limited or no connection between curriculum and community, or that students create the connections of their own accord.

Students at Public PL are connected to local concerns by design, both through encouragement from the teachers as well as specific learning requirements. “We’re encouraged to pay attention to... local social issues. We also have to learn about local history as part of our elements.” (3) These connections to the local community lead to project ideas as well. “In the past... there have been things that have happened... in our community and [teachers or students made] projects out of that.” (12)

Charter PL also has an expectation for students to engage in the local community as part of the graduation requirements. Different than Public PL, Charter PL students engage in “service learning”, or engage in activities in the community. “Students may go serve at a soup kitchen and serve... dinners for... people in need.” (15) Connections to the community also may take a more activist approach based on recognizing a local concern that has more global implications, as this student describes: “Last year another student [and I] decided to raise money [to] support children’s education in Haiti, which is something that both of us are passionate about.” (22)

As seen in the above quotes, and in more than half of all of the responses to this question the second common idea is seen; learning about issues in the local community involves experiential learning. Students engage in projects or activities in the community for the benefit of the community. “...those events... that happen to the core of the community really influences school. We’re [volunteering] to help clean up the conservancy that [was destroyed in a recent flood].” (1)

According to students at HP High, “The problems like we learn in school like aren't ... related to community.” This student followed up by indicating that students could make their own connections: “I had to set up my own ... project ..., you could focus on the community.” (7)

Other students did see how what they learned connects to the larger world, such as learning about laws in civics-related classes. However, when traumatic events happen in the community, one student said “what my teachers ... steer away from what was happening. So they didn't want to ... offend anyone or make someone feel bad...” (11)

Culture of Learning

How did you and other students work together in your classes or at your school - were you involved in group projects, and how did those groups form?

Different than learning about student learning experiences as they relate to the surrounding community, the questions centering on the culture of learning seek to understand how students see themselves as learners with others in the school. The question allowed me to hear stories about the social nature of learning through another lens. The direct query seemed to resonate with students; they did not ask for clarification or rephrasing of the question as often as was the case for other interview prompts. Asked in this manner, both HP High students and PL students describe frequent group work, although interestingly a higher percentage of HP students indicated that group work is frequent and normal than the participants in PL schools.

Most of the PL students related that they create the groups, as opposed to their non-PL peers in this study (all non-PL students intimated that teachers control the group makeup). “We meet every week just as a way to further develop our skills and working with a group is also another good skill to learn.” (22) For this student, learning how to work with others is part of

the learning as well as the academic content of the project. At Public PL, working with other students is part of the fabric of the school. “Working together is something that we do on a daily basis.” (1) Interactions between students to support learning might be providing feedback on another student’s project, learning from other students who have more expertise, or mentoring younger students.

Based on the responses from HP High students, despite widespread use of group work in classes, each student’s experience with group work varies widely in different classes. All of the participants mention that teachers assign students to groups. “You’re usually assigned a group. You can’t really pick because they’re trying to get away from you... picking your friend.” (7) Other students experience both groups assigned by the teacher and student-designed groupings: “...all of our math classes are put into teams of four and that’s assigned by the teacher. But with some of our classes when... we are able to choose our own... groups.” (8) Half of the students interviewed at HP High mentioned how groups are assigned in their mathematics classes, suggesting the school has a consistent model to form groups in at least one academic department.

The tone students used in describing group work was generally positive. Notable exceptions are from students who experienced undue burden in groups, often characterized by expectations for a higher level of effort to complete work than other students in the group: “I actually ended up doing a lot of the work which kind of sucked for me,” (9) and “occasionally I’ll get a group where they’re like ‘Oh we have you in our group, perfect’ and then not do anything.” (10)

A different perspective suggests that the room's physical organization either supports or makes more difficult the formation of groups. "...like math; they're tables that are together with ... four spots at them. So that encourages group work. Other ones are more like you're sitting in rows ... which doesn't necessarily lend itself to [forming groups]." (11)

Describe a typical learning process from your high school, how did you start on a new topic? How did you determine what to learn and how to demonstrate understanding?

As I designed the questions for the interviews, this question was included to generate thinking and answers which would verify the previous, more direct question on group learning and the formation of groups. That this question was asked directly after the direct question I assumed would support descriptions which included mention of groups. However, both the descriptions that HP High students provided and those from the students in PL schools did not include any mention of groups whatsoever. The responses did, however, bring out stark contrasts between HP High as a representation for the comprehensive high school model, and the two PL schools representing the personalized learning model.

Public PL and Charter PL have slightly different processes for initiating learning experiences as shown in the following responses, one from each school:

...in your classes you'll have an opportunity to talk with the teacher about a topic that interests you. ...you can go up to a teacher... and say 'can you help me with this project. I'll be in this class working on it.' ...[We] just have to write a piece about like this is my goal this is my interest level this is why I want to do it. This is my plan of action on how I'm going to do it. And then they'll give you some feedback on that and say 'This doesn't look very like a solid project. You should do it like this or go ahead and do it and I'll just

watch from the sidelines pretty much and guide you through it a little bit'. [Then] your teacher will... check in on you or you can ask them for help. Usually... a couple times a week. If they know that you're really good at just working on your own, then they'll check on you once a week or something. Um. Just to make sure that you're on pace and you don't have questions. If you're working with a group then... then they'll check in with you more often. But finishing the project... So once you're done with your gathering data and all that stuff and you're ready and you have a draft of your paper, then you go into student feedback and you get two [or] three students' feedback on it and you then... revise from that and then you'd get teacher feedback on that before you submit it. And then you would revise from that and then you would submit it again and then it usually takes a week or two. Sometimes faster if your teacher knows that you're going to want to revise it again to get the final product with the graded rubric back to you. And then you have the choice to revise it... or to just have it as a final product and not do anything further with it. (3)

Public PL Students describe a collaborative partnership with their teacher in which there is a flow of ideas, suggestions on how to improve product or process, and ways to connect interest with learning standards. Charter PL students describe a similar relationship with the educators in the school, although there is a larger dependence on student initiative:

Well it starts with a thought or an idea. And then you ask around and see if it's a good idea. Then you write the rationale, and you take it to the advisor and then [he or she] say yes or no to it and then you get it all ready and then you start taking notes for it and then after the notes you start writing an essay with the notes that you had. And then

after that you start making a product. Then after the product you assess it. And then after the assessment is done you decide on another project. So you basically go from there and then you do the same process over again. (16)

The overarching didactic model of learning typified in traditional schooling is evident in the HP High student responses. Each of the HP High students expressed a teacher-centered process in which the teacher decides on the topic for learning: “the teacher...would [say] after a test ‘now ... something new.’” (13) The expectation for development of understanding in the topic or area is through lecture or group work (as stated above, the students did not mention groups specifically, but alluded to working in teams in their mathematics classes) “the teacher will... give us the book and [show] a problem that we don’t really know how to do... and they’ll have us try to ... work through it as a team...” (9) Assessment of learning is often accomplished through a test or exam; Interviewer: “How do you demonstrate understanding?” Student #8: “...a lot of times it’s a test and sometimes it’s projects and sometimes it’s papers.” (8) In the previous question theme examining agency, one student indicated the teachers have no agency in determining the content in their classes. This is echoed by the same student here as well: “...oftentimes they just go by a book. So it’s not up to [the teacher] as much, either, given that they can choose what they teach from the book.” (8)

Common between Charter and Public PL, but different than HP High is that learning of academic and “soft” skills is built into the project process. Students determine the learning goals (granted, they are required to accomplish a set list of learning goals over the course of their schooling) and initiate the projects, and the students are expected to do the work of learning; teachers are not the gatekeepers for the dissemination of content knowledge. The

process of the projects is seen as formative learning, and there are multiple opportunities to receive feedback and improve the product. Projects are not only content carriers, but the students also engage in developing skills in working with others, provide feedback, develop persistence, and see learning as a process. Learning in the PL schools is couched in *using* knowledge, whereas learning at HP High is centered on *acquiring* knowledge.

Future Plans

This final interview section shifts from asking students about their past or present schooling experiences to asking students to project into their imagined future selves, and the influences on the models they have created for themselves. As in previous themes, there is a direct question (what are your after-graduation plans) as well as questions about how those plans came to being (what did you think about as you made those plans, and what influences you as you make decisions about your future). This theme explores student thinking and experiences as they describe their projected futures. One issue I was curious about is the extent to which students' perceived locus of control was internal (they create their paths based on their interests and desires) or external (their path was determined by parents or some other non-self-determinate pressure).

What are your after-graduation plans?

One of the criteria for selection to participate in the study was that the student was a high school senior in good standing; that is, each participant is on track to graduate in the same academic year as the year in which the study was conducted. All students articulated an idea of what she or he would be doing after graduation from high school. Codes used to analyze this question saw more consistency between the two school types. As mentioned, almost all

students interviewed have both college plans and an academic major in mind. Money, and specifically how to pay for school was also a consistent concern for seniors across all three schools.

While all students from HP High who participated in the study indicated an interest in attending college in the following year, a few PL students consider alternate pathways to higher ed, or transition directly to the workforce. “I might take a year off to get my affairs in order.” (13) “I’m going to take a gap year... I hope to get some sort of job during that time.” (14) And, “I plan to work a full-time job... I don’t really see myself going to college...” (16)

From these data it can be seen that the plans of the students from the three schools are more alike than different. They all have thought about and planned for their post high school graduation pathways. In planning this study, I thought I would be able to differentiate the seniors through how they described their plans or even in the plans themselves. In contrast, the participants were very consistent across the three schools; whether a student is earning a high school diploma from one of the two PL schools or from HP high it is not readily apparent in the data from this question.

All of the HP High students indicated intention to attend an academic college or university: “I want to go to a four-year university, hopefully [the local state university] and pursue a degree in biology.” (13) This quote described both the fact of a four-year university intent as well as an interest in a specific academic major. Most (five of six) of HP High students also spoke about their intended path in an academic major: “I hope to major in environmental studies or sustainability.” (10) “My major is going to be physical therapy.” (7) This student expressed not only a desire for a specific major but also knowledge of the degree requirements

to pursue employment in that field, “so that is... four years of an undergrad and three years of... you have to do your Ph.D. now, so that’s what I’ll do.” (7)

One small difference between HP High seniors and the students interviewed at the PL schools was half of the HP High responses included references to how family helped shape the intended post-graduation pathway, whereas only one senior from each of the other schools spoke about the influence of family as they answered this question. While I thought, as I designed the questions, I would hear about family influence in the next question, students brought up the idea in response to the more general question.

As mentioned earlier, the students who participated in the study were chosen by administrators at HP High, and by students who were interested in the two PL schools. The only filters I asked for were for the students to be on track to graduate, and for them to be demographically representative of the student body. Subsequent studies seeking to understand the student experience should seek to learn from students who are struggling to make progress toward graduation as well as those who are on track to earn a diploma.

What did you think about as you made those plans? What influences you as you make decisions about your future?

As mentioned above, this question was designed to evoke responses that would help me understand the extent to which a student’s projections about her or his future came from a self-determined mindset, or if the student recognized other factors in their planning. I sought to understand the student perceptions of her or his locus of control, and the agency they express through both the content and structure of their conversation.

Generally, the students interviewed at the two PL schools spoke with an agentic voice.

"I'm also looking [emphasis added] at... what majors they offer. I'm hoping and I'm looking [emphasis added] at opportunities for internships, immersive experiences..." (18). *"I did a lot of research [emphasis added] on different colleges and I actually made a list [emphasis added] of different things that I wanted for my college."* (23). In both of these quotes the use of "I" indicates the speaker sees herself as the action driver. It was clear to me that PL students I spoke to position themselves as central to decision-making about their next steps, even while recognizing the influence of others: "my advisor helped me choose um, like what sort of things I should be looking for in a college like class size and um, tuition. Um. And my mom has helped me [by saying] this is really expensive." (18)

Family was very important for some of the participants from HP High: "It would be better if I lived closer to my family... [it's] most of what keeps me very strong and my connection with my family is very strong as well. If I move away I feel like I'd break that." (11) Parents' vocation also was a factor for some students, "I am... interested in science... because my dad... works in all these laboratories... I was really intrigued by them." (13) One student, who indicated an interest in pursuing a career in physical therapy said "my dad's side of the family... all works in a hospital. And so we just kind of like grew up in... a medical field, I guess." (7)

More than seeing a parent work in a particular field, students also spoke about the ways their parents encouraged them to engage in learning: "My parents... would kind of push me to take harder classes, like my mom kept me in Spanish all the way through." (9) "I... feel... the support... from my... close friends. My parents have also really shown [and supported me]." (8)

Peer groups also play a role influencing HP High students, as seen in the previous statement, as do teachers, “In eighth grade I took a career planning class... and that made me realize that I kinda want to be an orthodontist or... a dentist.” (13)

This chapter worked through an analysis of each question, highlighting responses from each school. The stories that students told from PL and non-PL schools described their experiences of schooling, and at the same time illuminated structures of the schools they attended. There were both stark differences, particularly in the areas of how interests play a role in determining content, the extent to which students had agency to shape their learning, and the socially embedded nature of learning topics. There were also unanticipated similarities in how the students from all three schools planned for their lives after high school.

In the next chapter, I will position the data in reference to the research questions that overarches this study and how what I have learned here relates to the literature reviewed. The limitations of this research, lessons learned, and ideas for further study on this topic will also be included in the discussion.

Chapter 6: Discussion

I turn now to a discussion of how I interpret the analysis of the data in the previous chapter. To support a robust set of findings, I will connect the literature review to the data analysis, show how the sample group I chose helped to capture the data to come to these findings, as well as a brief exploration of the results of the study. The final section of this chapter will connect the research questions to the data, and answer the research questions: from the perspective of students, how does personalized learning affect high school student agency as defined by voice and choice and incorporate interest and socially embedded learning; and, in what ways does personalized learning impact students' social experience of learning and post-graduation plans?

This study was designed to learn about the impact of personalized learning as described by the students. To better understand the impact of PL on high school senior students who were on track to graduate, data was gathered through semi-structured interviews conducted in the schools they attended. This study was situated in PL environments as operationalized by two schools in a midwestern state. In addition, to provide comparative data I included interviews of students from a traditional comprehensive high school in the same area.

In chapter two, I described two bodies of literature to support this study; the first a review of the features of personalized learning, and the second an examination of literature describing informal learning that occurs outside of the structure of typical or traditional formal schooling. I provided an account of the features of PL most often included in the literature on PL to describe a set of practices that can be used to define what is meant, and what could be expected to be common features of a PL school. These practices and structures in PL schools

are in many ways in sharp contrast with the deep structures of schooling. From the table in chapter two, there are eight features that are typical of PL schools (see Table 2.1):

1. incorporating individual student needs,
2. student interests to determine the content of learning,
3. allowing student voice and choice to determine the learning path,
4. using competency-based outcomes to determine mastery of the learning topic,
5. learning aligned to performance standards that students can connect to learning tasks,
6. flexibility of the learning environment,
7. learning that is socially embedded
8. and the extensive use of formative assessments to provide feedback to students throughout the learning process.

To be sure, none of these features are exclusive to PL schools; these features can be seen in various iterations in many school improvement efforts.

The second area of literature germane to this research is informal learning. This aspect of personalized learning is intrinsic and forms the learning culture of the school. The features described above, when implemented in a school set the conditions for learning differently than in more traditional education settings. Students engage with others *to learn* because they have common interests and desire to learn with others. This culture more closely resembles self-initiated learning than compulsory schooling.

Student learning is not restricted to the schoolhouse; knowledge gained, skills developed, connections made, creation and maintenance of social networks occurs in all interactions between people. As knowledge has become more ubiquitous and communication

more universal, the ability to learn and engage in social networks to enhance areas of personal interest and passion has dramatically increased. Learning that has traditionally been restricted to the schoolhouse is now available to anyone with a connection to the internet. Together, these two broad areas of literature help describe and shape a set of features and characteristics of a personalized learning environment.

For the purposes of this study, I have focused on personalized learning environments as they are characterized by inclusion of student interests, student agency to determine the path of learning, the social nature of learning, and community interests and needs that become topics and context for learning. These constructs have the greatest impact on the day-to-day experiences of the students and were most clearly represented by the PL students. Both of the personalized learning environments included in this study, Public PL and Charter PL, include the features, characteristics, and learning climate that is indicative of personalized learning as it is described in the literature.

To learn about the impacts of these features on students, I conducted semi-structured interview with students from three schools. The first two schools characterize themselves as personalized learning schools, and the third, HP High is included to provide contrast and to compare voices of students from PL schools with voices of students who were learning in a more traditional, comprehensive high school environment. In order to better understand the student experiences, and then the impact of PL learning, the interviews were structured to elicit conversation and storytelling with the students. Using discourse analysis as a method to draw meaning from these conversations and stories, I was able to analyze what the students said and

from that come to a conclusion about how PL has had an impact on students that is different than the impact of traditional schooling on their high school peers.

Students for the interview were chosen from the three schools in a similar manner. In each school, I contacted the school administrator and asked for that person to find students who were high school seniors, on track to graduate, and the group should be demographically representative of the school. With this non-specific request, there were some differences in the groups from the PL and non-PL schools. Retrospectively, the school administration should have been provided more guidelines to ensure I had wide representation from both highly successful students and those for whom school was more of a struggle.

Specifically, the PL schools asked for volunteers from the entire senior class, whereas students from HP High were selected by the counselor. The students interviewed at HP High were students who were clearly successful in their efforts toward graduation, all getting high grades, all spoke about involvement in activities and sports outside of the school day, and all seemed optimistic and positive about their high school experiences. In the stories and descriptions of their experiences at school none of the students related any significant difficulties throughout their schooling.

The administrators at Public and Charter PL asked for volunteers from the senior class. The students who engaged in the interviews spoke of both scholastic and interpersonal struggles as well as the successes of their time in high school. While all were on track to graduate, one interviewee at Public PL was in his fifth high school year and several others mentioned mental health issues during the conversations. From the somewhat disparate composition of the interview cohorts, one might draw different conclusions; the agency that is

granted in the PL schools compared to the non-PL school is evidenced in how the students were chosen, or students who choose to enroll in PL schools do so because they do not feel they can be successful in a more traditional environment. Based on the interviews with the students and the administrators in each of the three schools, I conclude that there is some truth in both of these explanations. That the adults in the traditional school control the experiences of students is evident in the stories students related. At the same time, the conversations with the PL students often included descriptions of how the PL environment was better suited to them compared to the traditional school.

The sample composition tends to confirm observations I have made in my professional career in education; students from HP High reported that, in their experience the school aimed to control student behavior, learning, pace, placement, and access to information, and that the PL students reported a more open, agentic, and trusting environment. The results of this study go further to enhance ideas I had about schooling systems and personalized learning. At the same time, these results presented another lens for thinking about agency, learning, and outcomes for students.

The pair of research questions was used to develop four themes. The first three themes help expand on the first question:

- From the perspective of students, how does personalized learning affect high school student agency, as defined by voice and choice, and incorporate interest and socially embedded learning?
 - Student experiences in making choices about what and how they learn,
 - Student interests and needs incorporated into their planning and learning,

- Learning is connected to the context of the student and school,

and the second question led to the fourth theme:

- In what ways does personalized learning impact students' social experience of learning and post-graduation plans?
 - Participants' post high school plans.

The following discussion connects these four themes to the voices of the students. These themes were evident in the conversations with the seniors, with each interview shedding light onto the similarities and differences between these two personalized learning schools and the traditional, comprehensive high school.

Voice and Choice

All of the students who participated in this study expressed an ability to make choices about what they learned and at some level, how they learned it. That students experienced agency was clear in both what students related as well as how they spoke about their experiences. That being said, there are stark differences in level of agency. Students in comprehensive schools experience a growing level of ability to choose the courses or classes they take as they progress through school. Students in earlier grades have little choice as they take classes required for graduation, and each year there are more opportunities for "elective" courses that may have more alignment with their interests or passions. Another aspect of choice and voice of students in the traditional school is in activities and sports that are situated outside of the school day. Many of the students from HP High spoke about the clubs, organizations, and sports they participated in after school that aligned with areas of interest. Their engagement in participatory cultures occurs outside of the structure of the typical

learning day. Students at the two PL schools also related how their voices shaped their experiences, although their agency had more influence on their day to day learning.

Students in both Public and Charter PL all described a different type of choice making on than their HP High peers. PL students related how they decide what to learn, and how their voices are central to the structure of the learning environment. The climate of the school is reminiscent of the informal learning environments described by Ito, et al (2010). These students make choices about learning, based on their interests and passions daily as they engage in projects that help them show what they have learned as well as how they have learned it. They work with other students who have similar interests, or whose topic of study intersects, and their final outcome is strengthened through the collaboration. Recent research has shown the effectiveness and increased learning outcomes of project based learning, an “inquiry-based approach in which students explore real world problems through individual and group projects” (Lucas Education Research, 2021, p. 1). These students are intrinsically motivated to learn as they are following their chosen learning path. As described in Doyle (2015), students who engage in choice making and have agency in those choices develop skills, dispositions, and knowledge in thinking and planning about what to do, what they like, and how to position their ideas in a future context they would like to help bring to pass. The features of schooling that students in Public and Charter PL describe fit with the definition of a “culture of agency” in Halverson, et al (2015).

Inclusion of Interests

Students in both types of schools show that learning incorporates their interests. Again, how those interests impact learning is at a different grain size. HP High students chose classes

that they feel match their interests. Once that choice is made, however, the specific learning objectives are chosen by the teacher or as described by some students, by the school system. PL students related that there is a match between what they want to learn and what they are required to demonstrate mastery of. Their interests create the project topics, and students and their advisors work together to connect their projects with the state-determined standards they are held accountable to. The connection between interests and learning supports intrinsic motivation (Deci & Ryan, 2008), and PL students often use undivided interests to drive project ideas. Interestingly, students from both PL schools said the project process, providing feedback to other students, and learning with and between advisors created situational interest – new ideas that students then became interested in, thereby shifting back toward undivided interests (Krapp, 2007). As described in the review of literature, personalized learning descriptions and definitions are not specific about whether interests are those generated by individual students (undivided interest) or interests developed by students based on ideas presented to them (situational interest). However, as students in these two schools related their experiences, it was clear that the schools are structured to foster and accept both types of interest in the determination of learning projects.

Socially Embedded Learning

Socially embedded learning has two broad areas of interest; the social interactions within the school and between students and between students and staff or the *social nature* of learning, and the inclusion of the larger community to help shape the learning or the *context* of learning (Education Reimagined, 2015). PL students reported learning from other students, and they worked with students at all grade levels in the school. Through the process of developing

projects, students have multiple opportunities to create and engage in networked communities, and are able to self-regulate the depth of engagement – if they want to “hang out”, “mess around” or “geek out” on the topic of interest (Ito et al., 2010). The two PL schools’ students describe experiences and learning environments that closely match the characteristics described by Ito, et al.: “a stance of mutual respect and reciprocity, where youth expertise, autonomy, and initiative are valued” (p. 350). At the same time, PL students from both schools gave examples of how they both learned from, learned with, and helped their schoolmates to learn no matter their age or grade level. These communities of practice (as described in Gee, 2004) reinforced the learning as well as the social networks the students established and maintained throughout their school experience. At Charter PL, students in their first year of school are mentored by more experienced students as they learn how to engage in the project protocols and procedures. Public PL has less formal structures for students to work together, although it is clear that cooperative and collaborative work is the norm.

During the interviews at Charter and Public PL, students spoke about multiple opportunities to engage with the community to develop solutions for local problems through experiential learning. In this way, PL students are able to connect learning standards to their interests (both undivided and situational), and to the adult world of work (Davis & Fullerton, 2016). HP High students, for their part related that they learned from the teachers, who are the main source of knowledge, stated that there is no school-wide connection between learning tasks and local issues. To be sure, there are opportunities for student to engage with their community; HP High students spoke about clubs as the venue to make these connections.

The descriptions, stories, examples, and ideas related by the students from the PL school closely match descriptions of connected learning:

“Connected learning is realized when a young person pursues a personal interest or passion with the support of friends and caring adults, and is in turn able to link this learning and interest to academic achievement, career possibilities, or civic engagement” (Ito, Gutiérrez, Livingstone, Penuel, Rhodes, Salen, et al., 2013).

Moreover, PL students describe their learning experiences in ways that show the connection between their learning and the skills described by Tilling and Fadel in 21st Century Skills (2009): learning and innovation skills, information, media and technology skills, and life and career skills (p 48).

Sense of Agency

Students from all three schools reported a sense of agency. Just as clear is the marked difference between the PL schools and the traditional high school in the size, shape, and learning impact of that agency. Students from Public and Charter PL connected their interests to specific learning examples, whereas HP High students rarely mentioned specific lessons, projects, or learning experiences. As described previously, the grain size of agency is different in the two types of schools. Students in the PL schools have control over the day to day learning, and they speak about these experiences at that level of detail. They tell stories about the learning topics, project outcomes, and people they interacted with through the process of learning. HP High students’ agency is manifested in their ability to choose their classes. Their stories reflect this larger grain size, as they describe their engagement in the class as a semester- or year-long experience. As mentioned above, these two PL schools resemble

participatory cultures in the ease for students to engage in learning with others, students participating in the learning with other students, older or more experienced students supporting those new to the school, and the knowledge that their ideas, interests and input make a difference in the learning community (Jenkins, 2007). They also have aspects of affinity spaces in the ability of students to “affiliate with others based primarily on shared activities, interests and goals, not shared race, class, culture, ethnicity, or gender” (Gee, 2004, p. 67), which is predicted by descriptions of personalized learning environments (Halverson et al., 2015).

Students who learn in personalized learning environments report having more than an ability to influence their learning experience; their voices dictate and define their learning experiences. It is their interests, both undivided and situational that shapes the content and subject material in which the learning standards and outcome expectations are situated. Students in these two PL schools experienced schooling that corresponds to the features of personalized learning as detailed in the literature. Students learned with and from each other, the professional educators that supported these students were often seen by the students as partners in learning, rather than gatekeepers of knowledge. Moreover, the communities that surrounded these schools provide a rich context for learning, allowing students to examine and engage with the problems and issues outside of school to inform learning inside school, closely matching the Ito, et al (2013) depiction of connected learning.

Similarly, there is robust evidence to answer the first part of the second question: in what ways does personalized learning impact students’ social experience of learning and post-graduation plans? Clearly, there are both similarities and differences in the social experience for

students in these two PL schools and the experiences of the students attending the traditional, comprehensive high school. Students at HP High describe a predictable social landscape in which their social interactions are peripheral to the learning tasks and expectations for progression toward earning a high school diploma. The descriptions of the social environment in the two PL schools are vastly different. Because these students are in collaborative and cooperative learning relationships with both their age peers and the professional educators working in the schools, their experience of learning is one that corresponds with Jenkin's (2007) definition of participatory cultures and Gee's (2004) affinity spaces.

An area of great similarity between the stories from students in the personalized learning and traditional learning schools is in the post-graduation plans that the students related. All but one of the students interviewed intend to attend higher learning institutions after high school. Most of the students with plans to go to college have an academic major in mind and have been able to shape some portion of their learning experiences to align with their post-high school interests. The influence of family and the costs of attending school weigh similarly on the minds of students from all three schools. This finding refutes the underlying premise of the second section of the second question, that there would be a difference between students graduating from PL and non-PL schools in how they spoke about their post-graduation plans. Rather than the data exposing a difference, there was great alignment. For the students interviewed, both PL and non-PL schools have provided an opportunity for these high school seniors to prepare and plan for their intended lives beyond compulsory education. If the purpose of K-12 education is to prepare students to matriculate into their intended lives

after they graduate from high school, the students interviewed in these PL and non-PL schools report similar levels of preparation.

The data shows that personalized learning schools provide the opportunity, structure, experience, and context for learning which is more aligned with students' interests, intrinsic motivation, and the development of 21st century skills. These schools intentionally develop the ability to make choices, engage in learning that aligns with lifelong passions, and integrate students into the process of decision-making that has a direct impact on their experiences. Students told stories which exemplified these characteristics. From the perspective created through the literature review for this research, students learning at these PL schools are better positioned to demonstrate the knowledge, skills, and dispositions that are characterized as more desirable in bodies of work such as 21st century skills.

Implications for Further Research

This research is situated in the interview data obtained from students from three schools. This research could be bolstered by field observations and site-specific studies to connect the interview data with the observed practices, systems, and protocols in the schools. Connections between system design and implementation and the impact on students could be would increase understanding PL environments and how they affect intended outcomes for students.

An unknown, and an area for future research in this area is the extent to which these students demonstrate success in both their intended academic paths and subsequent careers. This study is limited to the moment in time framed by the interviews conducted in the fall of the students' senior year of high school. As such, the rich stories that the participants related

were situated in their experiences to that point, and their expectations for the near future. A longitudinal study that captures the evolution of agency as a student first enters a personalized learning environment and progresses through the compulsory school system, enters a post-secondary education program and enters the work force would allow researchers and policy makers see impact over time on students. In this way, researchers will be able to better differentiate impacts from PL and non-PL schools.

This study was limited to three schools: one traditional comprehensive high school and two personalized learning schools. All three schools are located in the same state and connected to population centers. Casting a broader net, looking at inner-city, rural, suburban, small and large schools and districts will provide a larger data set that could be controlled for region, school size, effects from proximity to higher education opportunities, and other potential impacts that may obfuscate the true impact of personalized learning.

Students who are not as successful or were not on track to graduate were not included in the sample. To be sure, some of the students interviewed in the PL schools related difficulties in their learning prior to enrolling in their current schools. There is not enough data, and no intentionality on my part, to gather specific data on learning struggles. It can be assumed that not all students are successful in either traditional schooling or in personalized learning. The extent to which personalized learning provides an alternate path for students who do not thrive in the typical learning environment may help policy makers, education leadership, and systems of education provide a viable path for educational success for more students.

Another oft referred to metric for school quality is performance on external (to the school) measures, such as state-controlled standards performance measures required by the

Every Student Succeeds Act (ESSA) of 2015. This study is centered on elevating student voice and demonstrating how these voices (the stories of the students experiencing the system designed ostensibly to benefit young people) can help researchers elucidate the benefits of schooling designs. How students from these three schools performed on their state tests is not relevant to the purpose of this study but can and should be a topic for further research.

Early in this study I demonstrated that there is no agreed-upon definition of personalized learning. Drawing from literature on this topic, however, I detailed features of schooling that are most often included in schools that define themselves as personalized learning schools. The two PL schools in this study exemplified the literature. That being said, these are two schools of many who use this moniker. Continued work to define what is meant by personalized learning to create a solid basis for and definition of this type of education enables students and their families to make better choices – and therefore to have more agency in schooling.

As shown in the stories told by students in this study, these two personalized learning schools welcome the personal narratives of the students into the learning process. It was from their discourse that the topic of learning was drawn so that students could demonstrate proficiency in the skills required by their state-mandated learning standards. Students were supported in their learning in such a manner as to ensure that each individual received the precise amount of support to meet learning expectations. Additionally, as the student narratives are central to the learning environment, these two PL schools provide equitable services to the students they serve. While not a focus of this research, the apparent ability of personalized learning schools to provide an equitable education to all students should be a

significant topic for continued research. This equitability lens should include examination of these schools' service to students from all backgrounds with specific attention to those students who are traditionally underserved in traditional public education.

Chapter 7: Conclusion

This study is an in-depth examination of personalized learning as it is practiced, both seen in the literature pertinent to personalized learning and describing features often part of a personalized learning landscape. More importantly, I present the data through an important lens for determining the quality of education set against the background of how young people engage in learning in and out of formalized schooling. By engaging students in conversations about learning and the impact of that schooling education leaders and policy makers are better able to determine the outcomes of structural and instructional decisions made ostensibly on behalf of students. Speaking to the students who are most directly affected by the policy decisions, whose experiences reflect the actual impact of the structures, and whose stories are a spotlight on the day-to-day occurrences in schools is a much more effective method for gaining feedback about schools.

The data gained from these interviews shows the connection between the implemented features of personalized learning and 21st century skills. As described above, personalized learning schools rework the deep structures of schools to allow a collection of progressive learning initiatives to become part of the schooling construct simultaneously. Features described in the review of literature (student needs, interests, voice and choice, competency-based learning, alignment to standards, flexible learning environments, socially embedded learning, and formative assessments) as well as informal learning concepts (communities of practice, affinity spaces, and connected learning) make a difference in the experiences of students in these schools. To be sure, many schools that do not describe themselves as

personalized learning schools include some of these ideas and structures; progressive education has included all of these at various times through the history of public education. It is the combination of PL features and informal learning that provides students the opportunity to learn in ways that are much more consistent with how adults choose to learn.

Personalized learning schools allow for a high level of student engagement in learning. Because the interests and needs of students are the driving force for how to achieve the required performance and skill standards, young people are much more interested in participating in school. As the students interviewed for this study related, learning in school and out-of-school interests are strongly connected (15 of 16 students made this comment). Because of this connection, students are much more likely to engage in learning that endures as shown in the specific examples of learning projects and outcomes related during the interviews. Additionally, participating in the school in agentic ways facilitates a greater ability for decision-making, resiliency, and persistence. The PL students spoke about how their experiences in school prepared them to be more organized, responsible, and able to work through difficulties after high school.

Both students attending personalized learning schools and the comprehensive high school who participated in this study were all on track to graduate, and all had post-secondary plans; students certainly can be and are successful in either system. That being said, personalized learning environments with similar features of schooling to these two schools have the potential to provide a more equitable education for all learners. The PL teachers and advisors provided precisely what was needed by each student to be successful in school. The personal narratives that students bring to school are central to the learning experience in PL

schools, while in more traditional schooling inclusion of interests is left to activities and clubs that occur outside of the learning environment.

The most significant difference between the day-to-day experiences of students in the two PL schools and the non-PL comparison school is the agency that is granted to the students by the education professionals working in the schools. The roles of the professional educators supporting the learners in these PL schools is quite different than the roles of the teachers at HP High. The PL students describe their teachers and advisors as mentors, coaches, and as co-learners. The adults in the PL schools are learning teachers, whereas the HP High teachers are described as content teachers. To be able to access the benefits to students that personalized learning (as implemented by these two PL schools) presents, a paradigm shift is required of adults working in traditional learning environments. Adults must engage with students and develop relationships where teaching the learning process through project-based learning is the focus, rather than content knowledge. Both learning process and academic content are vital to prepare students for their lives after high school; personalized learning schools emphasize the former to better access the latter.

Another important lens through which the data from this study should be examined is how students construct their conceptions of agency and how their ability to make decisions is manifested in a school environment. As the participants in this study were all on track to graduate from high school in the year they were interviewed, they each had a developed sense of agency situated in their specific learning environments. Students graduating from HP High, Public or Charter PL each seemed to understand their ability to shape their learning. In the PL schools, students saw their agency in their daily experiences, in choosing their path and shape

of learning, and in their ability to participate as a contributing member of their learning community. They talked about being in control of much of what they did. Students in the non-PL school, meanwhile, had a different sense of agency. Non-PL students' agency seemed to have little to do with the ability to control their daily routines. They depended on the teachers and adults in the system to determine the daily activities. The non-PL students spoke of their ability to influence their experiences at the level of choosing the classes they took at school and choosing their extracurricular activities.

These differences in the students' experiences in high school – choosing how they learned vs. choosing what they learned seems to have shaped their ideas of what they are able to control or influence. PL students spoke about their control of their day-to-day activities, their learning, and their pathways to and through learning. Their non-PL peers spoke of agency as the ability to choose their general form and content of their lives over the course of a year or school semester. Students learning in traditional schooling environments do not see themselves as the principal actors in the learning process, but as recipients of knowledge in a system designed by others.

Throughout this study I have used the constructs of student agency, interests, learning culture and context, and future planning to demonstrate that students I interviewed in these PL schools had very different experiences than students in the non-PL school. What the students related in their stories supports the findings of the review of literature. Agency is related to related to feelings of satisfaction, intrinsic motivation, and increased productivity (Meng & Ma, 2015) and is positively correlated with higher levels of learning, achievement, and skill and talent development (Reeve, 2013) as evidenced by specific descriptions of learning experiences

and project outcomes. Inclusion of interests drives motivation; without some level of interest in the topic at hand, there is little motivation to engage in or persist with learning about that topic (Krapp, 2007). Vygotsky (1978) wrote at length about the importance of both the relevance of learning to a larger (than school) setting and that learning is only possible through interaction of others.

However, a broader look shows that schooling for both PL and non-PL students interviewed has had a similar end result: each student had a post-secondary plan, all but one of which included intention to attend a four-year university. Moreover, the interviewees were all considered to be students, following and fitting within a hierarchical system of education that was designed by others for them. The diploma that students earn upon graduation from both the PL and non-PL schools carries equal weight.

The findings from this research connects literature describing how features of personalized learning support desirable dispositions (i.e. intrinsic motivation, increased productivity, higher levels of achievement and skill development) and experiences of students in personalized learning schools. The development of noncognitive skills in PL schools – as an intentional aspect of the design of the school – represents an overarching difference in the cognitive development between students in PL schools and non-PL schools (Rutledge, 2017). While not directly measured or assessed in this research, the participating in personalized learning should better prepare graduates for what will be expected of them in their post-secondary schooling endeavors. Assuming that the intent of compulsory schooling is to ensure success after graduation, development of personalized learning environments should be included in school districts' repertoire.

Conclusion

The term personalized learning has been used frequently to describe a swath of progressive education practices and structures with little research on the effects of such schooling. As there is no agreed-upon definition of personalized learning, the term has been used variably by educators, school systems, education technology and support companies and trade literature in the education domain. Additionally, the differential impact of learning in a personalized environment has not been robustly examined. This qualitative study of the stories that students tell helps to determine both what is meant by personalized learning as it aligns to common features included in what literature exists on the topic and allows readers to better understand the impact of personalized learning on students in those environments. Elevating the student voices, much as the two PL schools in this study centralizes student interests, allows policy makers, leaders, and educational practitioners as well as students and their families to understand both what is meant by, and what impact is realized in personalized learning. By including the voices of students in both PL schools and a more traditional, comprehensive high school, readers can determine how these two versions of schooling have had an impact on these students, and the extent to which these students have experienced, practiced, and shown proficiency in the skills and abilities which better prepare them for their lives after compulsory schooling. Personalized learning has great potential to mediate many of the equity challenges facing the typical school experience. It also brings to the center the students whose discourses and narratives are often in the periphery of school system design. In order to address equity, the repair of our system of public education must include the voices of

students both in the structure and operation of the school, as well as how we assess the success of the students and the school.

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Appendices

Appendix 1: Sources of PL Features

Below are short descriptions of the organizations from which I chose to gather information on personalized learning. These organizations are a mix between educator professional development and change support organizations (I4PL, LEAP, Education Reimagined), education research and advocacy groups, and philanthropic organizations advocating for a particular model for change. The descriptions were copied and adapted from the organizations' websites; the specific URL is given for each site.

Professional Development and Educational Systems Change Organizations:

Education Reimagined (from <https://education-reimagined.org/about/>):

The purpose of Education Reimagined is to accelerate the growth and impact of the learner-centered education movement in the United States through three methods. The first is by sharing the possibility of learner-centered education with a broad spectrum of education stakeholder groups, so as to attract new pioneers and grow support for pioneering efforts. The also strive to identify and embolden learner-centered pioneers already at work in communities, school systems, policy arenas, and the education profession, in order to grow the number of pioneers who see themselves as part of a larger movement. Finally, they intend to ignite and foster ever-growing communities of diverse learner-centered pioneers who wouldn't otherwise see each other as allies in a movement—thereby creating the conditions for them to effectively collaborate, innovate, and advocate together.

I4PL (from <http://institute4pl.org/index.php/home/>):

The Institute for Personalized Learning is a division of Cooperative Educational Service Agency #1, a provider of high-quality, cost-effective programs and services for K-12 districts in Southeastern Wisconsin. The intent and commitment of the Institute is to build on the work that was started with the CESA #1 Call to Action and the white paper, Transforming Public Education: A Regional Call to Action. I4PL's vision is a world where every learner has the capacity and drive to learn for life.

The mission of the Institute is to launch and infuse a learner-centered framework for scaling personalized learning and nurturing powerful learners. They have developed a model and process, and work with network schools and districts to re-design an educational ecosystem into one that is learner-centered. Through a unique action network approach, I4PL's networks are able to take advantage of experiences at multiple sites, simultaneously test a variety of strategies and share learning and research to accelerate the effort.

iNACOL (<https://www.inacol.org/about/our-story/>):

The International Association for K-12 Online Learning was formed to advance the work of teachers, administrators and public policymakers in the field of online learning. iNACOL advocates for the transformation toward student-centered, next generation learning for K-12 education. It is a membership organization, and supports a diverse community of practitioners and educators. They maximize support for these education innovators by remaining on the

cutting edge of the field, leveraging opportunities and constantly evolving. iNACOL continues to serve the field by advocating for policy transformation, sharing knowledge, and developing national quality standards.

KnowledgeWorks (from <http://www.knowledgeworks.org/about-knowledgeworks>):

KnowledgeWorks is a national organization committed to providing every learner with meaningful personalized learning experiences that ensure success in college, career and civic life. With a presence in more than 30 states, they develop the capabilities of educators to implement and sustain competency-based and early college schools, partner with federal, state and district leaders to remove policy barriers that inhibit the growth of personalized learning and provide national thought leadership around the future of learning. Through their portfolio of school and community approaches, they provide innovative tools, training and assistance to school leaders, teachers and community stakeholders.

LEAP (from <http://leaplearningframework.org/overview/>):

LEAP Innovations considers what personalized learning is and what it looks like in practice. As they work with educators to innovate in their classrooms they strive to answer the question: What are the core components of a truly learner-centered approach, and how do these translate into strategies for creating this experience for learners?

Originally released in 2016, and now in its second iteration, LEAP developed the LEAP Learning Framework alongside teachers, school leaders, and other national experts in order to answer

these questions, and to provide educators with a clear definition of personalized learning and the strategies to put it into practice.

Next Generation Learning (from <https://nextgenlearning.org/about>):

Next Generation Learning Challenges (NGLC) is an initiative of the non-profit EDUCAUSE, founded in partnership with the Council of Chief State School Officers (CCSSO), the International Association for K-12 Online Learning (iNACOL), the League for Innovation in the Community College, and the Bill & Melinda Gates Foundation. NGLC is a community of forward-leaning educators who are working in their communities and together as a network on the most urgent challenges in public education today. A non-profit initiative, NGLC was founded in 2010 with the understanding that, while we all have a role to play, it is the educators who should lead the transformation to next gen learning, because they are closest to the students and the learning. NGLC's role is to enable those educators with the vision to transform their schools and the passion and courage to pursue it.

Great Schools Partnership (from <http://greatschoolspartnership.org/about/about-gsp/>):

The Great Schools Partnership is a 501(c)(3) nonprofit school-support organization working to redesign public education and improve learning for all students. They are a team of passionate, committed educators and school leaders who bring decades of collective service in public schools. Working at all levels of the education system, from the classroom to the statehouse, the Great Schools Partnership provides school and district coaching, professional development, and technical assistance to educators, schools, districts, organizations, and

government agencies. They also create tools and resources for educators and communities, administer public and private grant programs, and coordinate large-scale school-improvement initiatives for foundations and states.

ELDN (from Ri, et al., 2016)

The ELDN is comprised of Rhode Island superintendents and assistant superintendents. Their vision for personalized learning, built in collaboration with the Center for Leadership and Educational Equity, connects with the concepts of student agency and empowerment discussed in Ri et al., 2016. In order for students to reach our mutually understood goals of social/emotional competence, rigorous content mastery, and strong soft-skill acquisition, we must have a collective ownership of student learning and empower students to learn and engage.

Philanthropic Organizations:

Bill and Melinda Gates Foundation (from <https://www.gatesfoundation.org/What-We-Do>, and <https://www.gatesfoundation.org/What-We-Do/US-Program/K-12-Education>):

The Bill and Melinda Gates Foundation works with partners worldwide to tackle critical problems in five program areas: Global Health, Global Development, Global Growth & Opportunity, United States Division (works to improve U.S. high school and postsecondary education), and our Global Policy & Advocacy Divisions. Their approach to grant making in all five areas emphasizes collaboration, innovation, risk-taking, and, most importantly, results.

The goal of the U.S. Education Division is to support innovation that can improve U.S. K-12 public schools and ensure that students graduate from high school ready to succeed in college. By focusing on the common goal of improving education through innovation—and by building on and sharing effective tools, strategies, and standards—educators, school leaders, and nonprofit partners across the country can transform U.S. public education.

Nellie Mae (<https://www.nmefoundation.org/about-us/big-goal>):

The Nellie Mae Foundation’s work is organized around a simple but visionary goal: universal post-secondary attainment supported by universal college and career readiness for all New England public school graduates. The Foundation is investing \$200 million over the next five years as a first bold step towards this critical goal. As a part of this goal, the Foundation has set a target of ensuring that 80% of New England students are college and career ready by 2030. Our grant-making is organized into four initiatives that set out to advance this readiness target. They are working to advance student-centered approaches to learning across New England to ensure that all students are prepared for life after high school.

Government Institutions:

U.S. Department of Education (from https://www2.ed.gov/about/overview/focus/what_pg2.html):

The U S. Department of Education (ED) engages in four major types of activities, based on Public Law 96-88. These four purposes are:

- To establish policies relating to federal financial aid for education, administers distribution of those funds and monitors their use.
- Collect data and oversee research on America's schools and disseminates this information to Congress, educators and the general public.
- Identify the major issues and problems in education and focus national attention on them.
- Enforce federal statutes prohibiting discrimination in programs and activities receiving federal funds and ensure equal access to education for every individual.

Appendix 2: Student Interview Protocol

Interview Protocol for Students:

Name: _____

Location: _____ Date/Time of Interview: _____

1. Opening:

- a. Please tell me your name.
- b. How long have you been attending this school?
- c. Describe your school to me; how would you talk about your school to someone thinking about coming to school there?

2. Agentic Experiences (voice and choice):

- a. Tell me about how you decided what to learn about in high school.
 - i. What classes did you take?
 - ii. what options did you decide from?
 - iii. How did you know what you wanted/decided to take or learn?
- b. Talk about your most and least favorite learning experiences in high school.
 - i. What made it your favorite?
 - ii. Why was that your least favorite?
- c. What was your involvement
 - i. In choosing which school to attend?
 - ii. In choosing what you learned?
 - iii. In picking topics or areas to learn about?
 - iv. In setting the pace or place of learning?

- v. In determining how your learning would be assessed?

3. Inclusion of Interests:

- a. To what extent did what the teachers ask you to learn match with what you wanted to learn?
- b. Describe the similarities and differences between things you are interested in your life outside of school and those things you learned as part of school.

4. Socially Embedded Education:

- a. Tell me about the culture of your school.
 - i. Who did you learn with/who was in your classes?
 - ii. Who did you learn from?
 - iii. Who did you help learn?
- b. How do things you learned in school connect to your life outside of school?
- c. What impact will your schooling have on you after you graduate?
- d. How were the problems and issues you learned about in school connected to your community?

5. Culture of Learning

- a. How did you and other students work together in your classes or at your school?
 - i. Were you involved in group projects?
 - ii. How did the groups form (you decided, teacher decided, etc.)?
- b. Describe a typical learning process from your high school –
 - i. How did you start on a new topic?

- ii. How did you determine what to learn and how to demonstrate understanding?

6. Conclusion

- a. What are your after-graduation plans?
- b. What did you think about as you made those plans?
- c. What influences you as you make decisions about your future?
- d. What should I know about your schooling that I have not asked about?
- e. What questions do you have for me?

Appendix 3: School Leader Interview Protocol

Interview Protocol for School Leader:

Name: _____

Location: _____ Date/Time of Interview: _____

1. Opening:

- a. Please tell me your name.

2. Learning Environment:

- a. How would you characterize the school?
 - i. In terms of its structural model (comprehensive, option, PL, other)?
 - ii. Demographics?
 - iii. How do students opt into this school (as opposed to other options for high school in the district)?

Appendix 4: Pilot Group Interview Sample

In the below segment, transcripts from a panel interview with high school seniors in a PL school is analyzed for evidence of passive or active voice; do the students position themselves (or others) as being in control of an action, or are actions the result of something beyond the control of themselves or others. The green highlight indicates some level of agency (I wanted to, I don't like, I find my interests), the yellow highlight is the passive voice. This analysis represents one portion of the overall analysis that will be conducted with the data from the proposed study.

94	Interviewer:	[00:10:49]	mm.
95	Student 1:	[00:10:49]	um, Which can help influ- Which can influence what they want to do. I, I wanted to go into forensic science for a while. I don't anymore. But um heh, the university had a bunch of stuff, that, um let me figure out NO, I don't like to do this heh heh.
96	Interviewer:	[00:11:07]	ok
97	Student 2:	[00:11:08]	Mostly all the experiences I've been on, at our school there's multiple experience days you go on like they have opportunities to go with a certain teacher. It's like a construction thing or another thing and they chose some of those to go on so if I'm interested in what the what that's about and by going on that see if it's still the same I want to do.
98	Interviewer:	[00:11:27]	mm.
99	Student 2:	[00:11:27]	from what people said about it from what it looks like there um, It's how I usually find my interests in what I want to do is just those. And by that people- the teachers asked me oh why did you choose to come on and experience. And then I talked about that I was interested in it n this was trying to help me show that. And then they get that information by that. By just me talking about how- why I was interested in that experience and=

Appendix 5: Permission Forms

Student Notification (if participant is 18 years or older)

Dear High School Senior,

I am a graduate student and researcher at the University of Wisconsin Madison, working in partnership with your school district, to understand the impacts of Personalized Learning. Prior to my studies at UW, I have worked as a teacher and principal in schools for 20 years.

You have been selected to participate in an interview to help me learn about your experiences in high school. The interview will be 45-60 minutes and will be scheduled outside of your academic time. Participation is voluntary, and no identifiable information about you will be recorded. The audio recording of the conversation will only be used for transcription purposes.

If you agree to participate, please sign the attached form and initial the line granting permission to audio-record.

If you have any questions about this request, please feel free to contact me or the principal investigator of the study.

Thank you very much,

Francis Redmon

Redmon@wisc.edu

847-830-8033

Principal Investigator:

Richard Halverson

Professor

UW-Madison

Educational Leadership and Policy Analysis

Student Consent Letter (if participant is 18 years or older)

UNIVERSITY OF WISCONSIN-MADISON

Research Participant Information, Consent, and Assent Forms

Title of the Study: Personalized Learning

Principal Investigator: Rich Halverson (phone: 608-265-4772)
(email: halverson@education.wisc.edu)

DESCRIPTION OF THE RESEARCH

You are invited to participate in a research study designed to document how students experienced learning in your school. The research will be conducted in your school classroom setting. The outcomes of the study are to produce research papers for scholarly and practitioner audiences to communicate the results of our work.

WHAT WILL MY PARTICIPATION INVOLVE?

Our research activities will involve: conducting 45-60 minute interviews with 10 students in each of four schools; and conducting 15 minute interviews with selected instructional leaders in each school.

While the school district is allowing us to observe classroom activities, we ask you for permission to interview you. All the interviews will happen outside of the required instructional time.

If you decide to participate in this research you will be possibly be asked to be interviewed about your perceived level of involvement in designing and shaping your learning experiences. Your participation will last 45-60 minutes per session for up to 2 sessions, which could require one hours and twenty minutes in total.

AUDIO RECORDING

With your permission, researchers will be recording audio during their interactions with you. Audio recordings will be stored in a secured location; only research team members will have

access to the audio files. If you agree to allow us to record audio of our interactions with you, please initial the statement at the bottom of this form.

ARE THERE ANY RISKS TO ME?

We don't anticipate any risks to you as a result from this study. You will be interviewed at their school.

ARE THERE ANY BENEFITS TO ME?

There are no direct benefits to you, however talking about your input into the learning process may change their understanding of student agency.

HOW WILL MY CONFIDENTIALITY BE PROTECTED?

Although we may quote some of your comments in our work, your name or identifying characteristics will not be used in the study. If you agree to allow us to quote you in publications, please initial the statement at the bottom of this form.

No part of audio recordings will be used publicly. Recordings will be destroyed one year after the study has ended.

WHOM SHOULD I CONTACT IF I HAVE QUESTIONS?

You may ask any questions about the research at any time. If you have questions about the research after you leave today you should contact the Principal Investigator Rich Halverson at 608-265-4772. You may also call the Project Researchers at 847-830-8033.

If you are not satisfied with the response of the research team, have more questions, or want to talk with someone about your rights as a research participant, you should contact the Education and Social/Behavioral Science IRB Office at 608-263-2320.

Your participation is completely voluntary. If you decide not to participate or to withdraw from the study it will have no effect on you grades in any way.

Your signature indicates that you have read this assent form, had an opportunity to ask any questions about your participation in this research and voluntarily consent to your participation. You will receive a copy of this form for your records.

Name of Participant (please print): _____

Participant Signature: _____ Date: _____

_____ I give my permission to be audio-recorded during interviews and observations.
(initials)

_____ I give my permission to be quoted directly in publications without using my child's name.
(initials)

Parent Notification

Dear Parent of a High School Senior,
I am a graduate student and researcher at the University of Wisconsin Madison, working in partnership with your school district, to understand the impacts of Personalized Learning. Prior to my studies at UW, I have worked as a teacher and principal in schools for 20 years.

Your student was selected to participate in an interview to help me learn about their experiences in high school. The interview will be 45-60 minutes and will be scheduled outside of their academic time. Participation is voluntary, and no identifiable information about your child will be recorded. The audio recording of the conversation will only be used for transcription purposes.

If you agree to have your student participate, please sign the attached form and initial the line granting permission to audio-record.

If you have any questions about this request, please feel free to contact me or the principal investigator of the study.

Thank you very much,

Francis Redmon
Redmon@wisc.edu
847-830-8033

Principal Investigator:
Richard Halverson
Professor
UW-Madison
Educational Leadership and Policy Analysis

Parental Consent Form

UNIVERSITY OF WISCONSIN-MADISON

Research Participant Information, Consent, and Assent Forms

Title of the Study: Personalized Learning

Principal Investigator: Rich Halverson (phone: 608-265-4772)
(email: halverson@education.wisc.edu)

DESCRIPTION OF THE RESEARCH

You are invited to consent to your child's participation in a research study designed to document how students experienced learning in your student's school. The research will be conducted in your child's school classroom setting. The outcomes of the study are to produce research papers for scholarly and practitioner audiences to communicate the results of our work.

WHAT WILL MY PARTICIPATION INVOLVE?

Our research activities will involve: conducting 45-60 minute interviews with 10 students in each of four schools; and conducting 15 minute interviews with selected instructional leaders in each school.

While the school district is allowing us to observe classroom activities, we ask you for permission to interview your student. All the interviews will happen outside of the required instructional time.

If you decide to allow your child to participate in this research your child will be possibly be asked to be interviewed about their perceived level of involvement in designing and shaping their learning experiences.

Your child's participation will last 45-60 minutes per session for up to 2 sessions, which could require one hours and twenty minutes in total.

AUDIO RECORDING

With your permission, researchers will be recording audio during their interactions with your child. Audio recordings will be stored in a secured location; only research team members will have access to the audio files. If you agree to allow us to record audio of our interactions with your student, please initial the statement at the bottom of this form.

ARE THERE ANY RISKS TO MY CHILD?

We don't anticipate any risks to your child as a result from this study. Your child will be interviewed at their school.

ARE THERE ANY BENEFITS TO MY CHILD?

There are no direct benefits to your child, however talking about their input into the learning process may change their understanding of student agency.

HOW WILL MY CONFIDENTIALITY BE PROTECTED?

Although we may quote some of your child's comments in our work, your child's name or identifying characteristics will not be used in the study. If you agree to allow us to quote your child in publications, please initial the statement at the bottom of this form.

No part of audio recordings will be used publicly. Recordings will be destroyed one year after the study has ended.

WHOM SHOULD I CONTACT IF I HAVE QUESTIONS?

You may ask any questions about the research at any time. If you have questions about the research after you leave today you should contact the Principal Investigator Rich Halverson at 608-265-4772. You may also call the Project Researchers at 847-830-8033.

If you are not satisfied with the response of the research team, have more questions, or want to talk with someone about your rights as a research participant, you should contact the Education and Social/Behavioral Science IRB Office at 608-263-2320.

Your participation is completely voluntary. If you decide not to participate or to withdraw from the study it will have no effect on your child's grade in this class.

Your signature indicates that you have read this assent form, had an opportunity to ask any questions about your participation in this research and voluntarily consent to your child's participation. You will receive a copy of this form for your records.

Name of Parent or Guardian (please print): _____

Name of Participant (please print): _____

Parent/Guardian Signature: _____ Date: _____

_____ I give my permission for my child to be audio-recorded during interviews and observations.
(initials)

_____ I give my permission for my child to be quoted directly in publications without using my child's name.
(initials)

Appendix Six: Research Themes to Interview Protocol

Research Questions

From the perspective of students, how does personalized learning affect high school student agency, as defined by voice and choice, and incorporate interest and socially-embedded learning?

In what ways does personalized learning impact students' social experience of learning and post-graduation plans?

Themes

Their experiences in making choices about what and how they learn (examples of student voice and choice as well as participatory cultures)

How their interests and needs have been incorporated into their planning and learning (examples of inclusion of student interests)

How their learning has included the context of the student and school (whether learning is socially embedded)

Their post high school plans (to be able to gauge their sense of agency)

Interview Questions

Opening:

- a. Please tell me your name.
- b. How long have you been attending this school?
- c. How did you come to attend this school (instead of some other option)?
 - i. What options were available to you?
- d. Describe your school to me; how would you talk about your school to someone thinking about coming to school there?

Agentic Experiences (voice and choice):

- a. Tell me about how you decided what to learn about in high school.
 - i. What classes did you take?
 - ii. what options did you decide from?
 - iii. How did you know what you wanted/decided to take or learn?
- b. Talk about your most and least favorite learning experiences in high school.
 - i. What made it your favorite?
 - ii. Why was that your least favorite?
- c. What was your involvement
 - i. In choosing what you learned?
 - ii. In picking topics or areas to learn about?
 - iii. In setting the pace or place of learning?
 - iv. In determining how your learning would be assessed?

Inclusion of Interests:

- a. To what extent did what the teachers ask you to learn match with what you wanted to learn?
- b. Describe the similarities and differences between things you are interested in your life outside of school and those things you learned as part of school.

Socially-Embedded Education:

- a. Tell me about the culture of your school.
 - i. Who did you learn with/who was in your classes?
 - ii. Who did you learn from?
 - iii. Who did you help learn?
- b. How do things you learned in school connect to your life outside of school?
- c. What impact will your schooling have on you after you graduate?
- d. How were the problems and issues you learned about in school connected to your community?

Culture of Learning

- a. How did you and other students work together in your classes or at your school?
 - i. Were you involved in group projects?
 - ii. How did the groups form (you decided, teacher decided, etc.)?
- b. Describe a typical learning process from your high school –
 - i. How did you start on a new topic?
 - ii. How did you determine what to learn and how to demonstrate understanding?

Conclusion

- a. What are your after-graduation plans?
- b. What did you think about as you made those plans?
- c. What influences you as you make decisions about your future?
- d. What should I know about your schooling that I have not asked about?
- e. What questions do you have for me?