



RELATIONAL COORDINATION
RESEARCH COLLABORATIVE

Organizing for Student Success

The Role of Relational Coordination in Building a Collaborative Culture

A Report for the Nellie Mae Education Foundation

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The RCRC is a research and learning collaborative housed at Brandeis University that uses the theory of relational coordination to help organizations transform relationships for high performance. The RCRC connects researchers and practitioners around the world to develop and test new models of change, exploring how participants transform their relational dynamics and how they redesign their structures to support and hardwire the new dynamics. The RCRC examines how these changes impact critical performance outcomes including quality, safety, efficiency, engagement, learning, and innovation.

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Executive Summary

To strengthen their ability to meet the needs of its students and families, administrators, teachers and staff at North Reading High School (NRHS) have engaged in efforts to understand and implement a student centered approach to learning. The leadership team at NRHS recognized the need to build relational capacity to enable staff to think and approach their work more systematically and to better coordinate around the learning needs of all students. As such, NRHS is using the relational coordination framework and the relational model of change (RMOC) to implement personalized learning to accelerate learning and better meet the needs of their student population.

This report analyzes efforts to build relational capacity in the NRHS, and in particular, to impact how interdependent work groups including teachers, specialists, psychologists and administrators work together in the implementation of a student-centered approach to learning. To prepare this evaluation report, the Brandeis University research team conducted two waves of baseline data, and a series of on-site observations as well as semi-structured interviews with key informants in the NRHS representing teachers, administrators, and the lead consultant for this change initiative, between June 2018 and June 2019. Both qualitative and quantitative data were used to conduct this evaluation.

To begin the process of building relational capacity, NRHS has initiated the six stages of change, guided by the RMOC. Together, the data summarized in this report suggest a set of strengths and opportunities for school leaders, administrators and teachers at all levels to consider:

- **Build shared goals & shared knowledge within and across stakeholder groups.** Engage all members of the school community, including part-time school staff, community representatives, families and students. Including internal and external stakeholders will support relational capacity building and enable collective participation to share knowledge across interdependent roles and to build systemness toward shared goals.
- **Cultivate a shared understanding of personalized learning.** Develop frameworks and protocols for integrating personalized learning into the curricula, building on the new advisory model and more widely available technology to identify and share student goals, strengths and interests. Engage stakeholders, including students, to identify standards of success and relate these measures to required educational standards.
- **Identify and share resources to support personalized learning.** Develop a reference guide for staff - and students - with examples of identifying and integrating materials and resources to supplement and personalize lessons and activities.
- **Develop school structures to support relational coordination and personalized learning.** Increase interdepartmental collaboration opportunities and sharing opportunities with other MAPLE schools, to share experiences of personalized learning in action, progress, challenges and successes, and to coordinate around a student centered approach to learning.

Within NRHS, there is an opportunity to transform the processes of personalized learning into a model of co-production and partnership with students and families. To do so would require leveraging strengths, acknowledging feedback, being honest about weaknesses, and taking deliberate and decisive action to be responsive to opportunities.

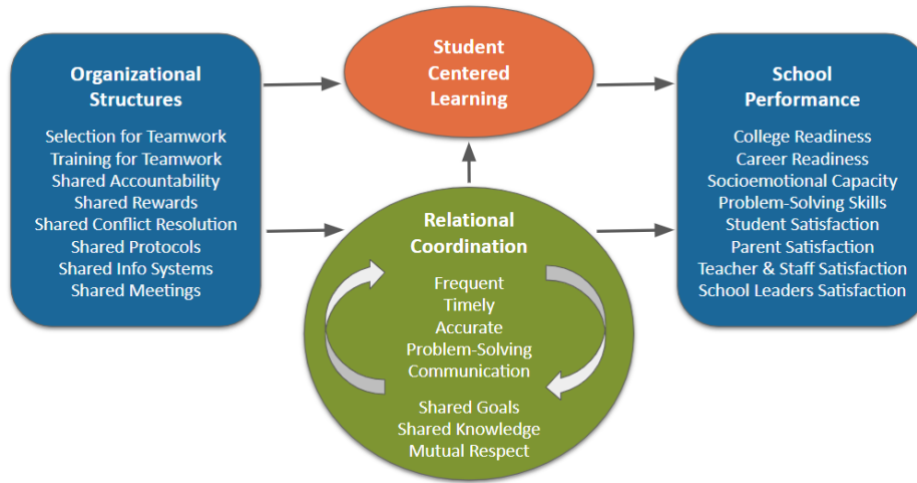
1. A Relational Model of Student Centered Learning

To better meet the needs of its students, North Reading High School (NRHS) leaders, administrative staff and teachers have engaged in efforts to understand and implement a student centered approach to learning. Supported by a growing body of research,¹ student-centered learning is expected to support a broader range of student outcomes such as greater college and career readiness, enhanced executive functioning and problem solving skills, and greater socioemotional capacity. As part of their strategy, the North Reading School District joined the MAPLE consortium in November 2016 as an initial step toward the implementation of a personalized learning curriculum - a student centered approach which is adapted within a framework of established curriculum standards and which uses technology to accelerate student learning. The goal of MAPLE, a partnership between Learn Launch and the Massachusetts Department of Elementary and Secondary Education, is to serve as a catalyst to personalized learning throughout the public education system by connecting schools with the necessary resources needed to meet the needs of all students including, but not limited to, professional learning, digital tools, funding strategies, and a rich evidence base. As a member of the consortium, NRHS has access to a wide range of resources including opportunities to learn from other member school districts and professionals as they adopt innovative strategies and ideas to transform learning and teaching.

Recognizing that personalized learning requires leaders, teachers and staff to be highly coordinated, members of the leadership team at NRHS identified the need to build relational capacity to enable staff to think and act more systematically about the learning needs of all students. Building on existing research regarding social capital in the education context (Leana, 2011; Pil & Leana, 2009; Leana & Pil, 2006), the North Reading High School is using the relational coordination framework to inform its efforts to adopt a personalized learning curriculum. Defined as communicating and relating for the purpose of task integration, relational coordination is a form of social capital that can be developed among professions and with community partners to create a relational ecosystem for high performance (Gittell, 2002; 2003; 2006; 2009). Relational coordination is empirically associated with a wide range of desirable outcomes, including quality, safety, efficiency, client engagement, worker well-being, learning and innovation (Gittell, Logan, Bolton, 2018). See *Figure 1* for a conceptual model of relational coordination and student centered learning. In the Relational Model of Student Centered Learning, relationships of shared goals, shared knowledge and mutual respect are supported by frequent, timely, accurate and problem solving communication within and across workgroups within a school. These high quality relationships and communication are supported by organizational structures and are expected to accelerate the implementation of personalized learning and lead to positive school performance outcomes.

¹ Nellie Mae Education Foundation (2014). *Systems Change Through Student-Centered Learning: A New Logic for District Level Systems Change*, August; Benigni, M.D. and Haeffner, B.A. (2015). Student designed personalized learning. *School Administrator*, November; Benigni, M.D. and Benham, E. (2016). When our teachers learn, our students learn. *School Administrator*, November 1; William and Flora Hewlett Foundation (2013). *Deeper Learning Defined*; Bill and Melinda Gates Foundation (2013). *What is Personalized Learning? A Working Draft*.

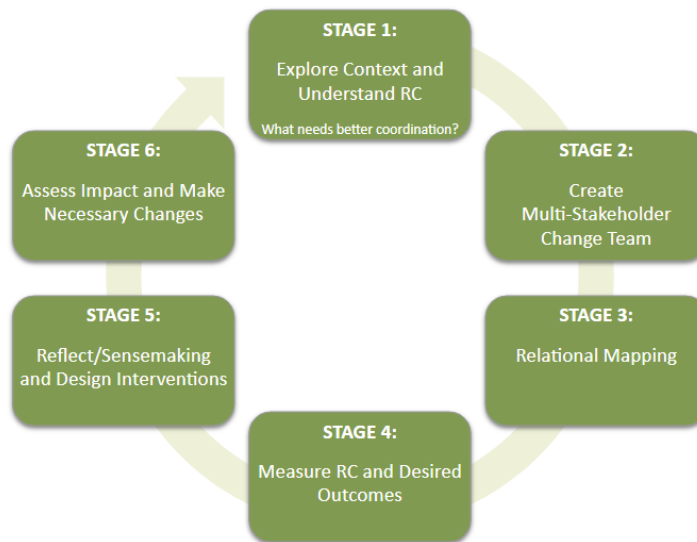
Figure 1: A Relational Model of Student Centered Learning



Relational Model of Change

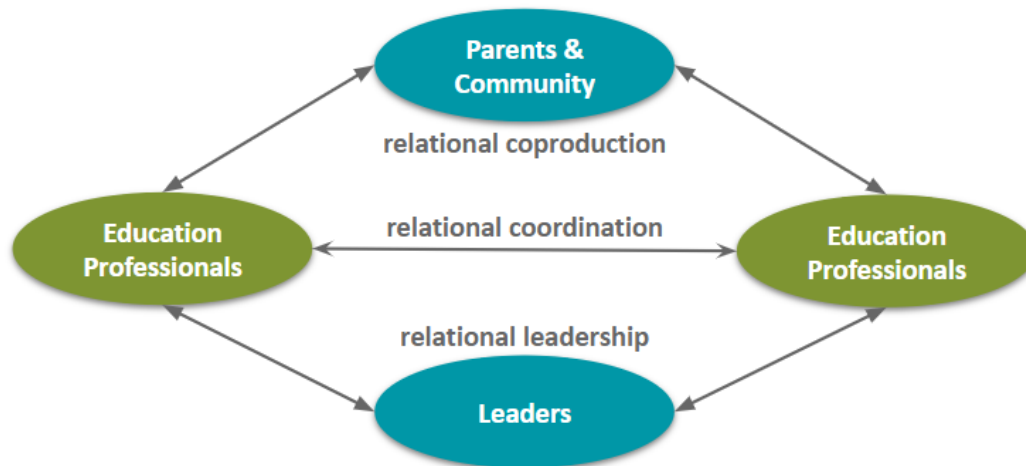
The Relational Model of Change (RMOC) is an evidence based approach for building relational coordination and other forms of relational capacity (Gittell, 2016). The RMOC is a six-stage implementation model that includes 1) exploration of the context and introduction to relational coordination principles, 2) creation of a change team that represents key stakeholders, 3) relational mapping, introduced as a tool, to visualize interdependencies of work and hypothesize the strength of ties within and between stakeholder groups, 4) measurement of baseline relational coordination among key stakeholders as well as key outcomes of interest, 5) reflection on survey results through conversation among key stakeholders and design interventions to address the opportunities they identify, then 6) implementation of these interventions and assessment of changes in RC and outcomes (Gittell, 2016). These stages are summarized in *Figure 2*.

Figure 2: Six Stages of Change



Through this implementation process, relational capacity can be built in three forms - relational coordination among school professionals, relational leadership between school professionals and their leaders, and relational co-production with students, parents and the broader North Reading community. See *Figure 3*.

Figure 3: Three Types of Relational Capacity



2. Change Process

To begin building relational capacity, the NRHS leadership team engaged teachers, specialists and administrative staff in a series of professional development workshops and organizational activities, informed by the Relational Model of Change (RMOc). See Appendix 1 for a table of coaching sessions and professional development workshops that have been conducted as part of this grant. The remainder of this report is organized by the stages of change that the NRHS has engaged in during this pilot project beginning June 1, 2018 and ending on June 30, 2019. During the school year covered by the study period, NRHS engaged in Stages 1-4 of the RMOc which includes exploring the context, introducing principles of relational coordination, creation of a change team, socialization of relational coordination and personalized learning, relational mapping and baseline measurement and sensemaking with the data. Currently in the planning phase for Stage 5, the NRHS team is highly motivated to continue the work beyond this grant period.

Stage 1: Explore the Context and Introduce Relational Coordination Principles

Between June and August 2018, NRHS staff engaged in a series of conversations with members of the Relational Coordination Research Collaborative at Brandeis University to understand concepts of relational coordination and learn how to use relational methods to systematically implement student centered approaches to learning. As part of these initial efforts, the Brandeis Team worked closely with key stakeholders at NRHS to: 1) introduce relational coordination concepts and change methodology, 2) design a relational coordination survey as well as custom questions related to personalized learning, 21st century skills and felt accountability measures, and 3) pilot the baseline survey with a small group of teachers and staff.

Many MAPLE catalyst districts use the Future Ready Framework² to assess personalized learning implementation as an instruction strategy and this study considered two elements of this framework, Curriculum, Instruction and Assessment and Use of Space and Time for inclusion in the survey, referenced in the personalized learning and 21st century skills questions. Felt Accountability items included in the survey are consistent with the theoretical research on felt accountability (Frink & Klimoski, 2004), with empirical research on felt accountability (Wallace et al., 2011), and with recent education research on measures of internal or felt accountability (Weiner & Higgins, 2017).

See Table 1 for survey questions.

Table 1: Relational Coordination and Custom Survey Questions

Construct	Survey Question
Relational Coordination	
Shared Goals	Do people in each of these groups share your goals for meeting the learning needs of all students you have in common?
Shared Knowledge	Do people in each of these groups know about the work you do to meet the learning needs of all students you have in common?
Mutual Respect	Do people in each of these groups respect the work you do to meet the learning needs of all students you have in common?
Frequent	How frequently do people in each of these groups communicate with you about meeting the learning needs of all students you have in common?
Timely	Do they communicate with you in a timely way about meeting the learning needs of all students you have in common?
Accurate	Do they communicate with you accurately way about meeting the learning needs of all students you have in common?
Problem Solving	When there is a problem with meeting the learning needs of all students you have in common , do people in each of these groups blame others or work with you to solve the problem?
Personalized Learning	

² The Future Ready Framework (www.futurereadyschools.org) outlines a systematic approach to change, with consideration for seven “gears” to achieve successful use of technology to support personalized student learning; the gears include Curriculum, Instruction and Assessment, Use of Space and Time, Robust Infrastructure, Data and Privacy, Community Partnerships, Personalized Professional Learning and Budget and Resources.

	<p>To what extent do you agree with the following statements?</p> <ul style="list-style-type: none"> ● In our school, students have a significant influence in determining key aspects of their learning. For example: what essential questions they investigate, how they use technology to learn, when they learn, with whom they learn, and when their projects are completed. ● In our school, students are empowered to use social media in their learning (e.g., learn from twitter feeds, blogs, online interactions and collaborations with texts, tweets and other social media) ● Students in our school are provided digital tools to manage their own learning (e.g., project and time management, calendars, scheduling, digital locker, ePortfolio, etc.) ● Our school has established flexible scheduling that enables adaptability as students personalize their own learning. ● Our school allows students alternative routes to earning credits beyond seat time (e.g., project or performance reviews based on established metrics/rubrics, badges earned in online environments). ● Our school is offering students options for online courses and online and blended learning that empowers students' to personalize their own learning. ● In our school, libraries of digital content are mapped to the curriculum to provide students with choices as to mode and method of learning. ● Our school has established a model and guidelines for individualized learning plans and supports all students to develop such plans. ● All teachers in our school are supported to use research-based techniques to build self-direction in students.
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21st Century Skills

	<p>Indicate the support your school provides for students to develop each of the following 21st Century Skills:</p> <ul style="list-style-type: none"> ● Critical thinking ● Problem-solving ● Creativity and innovation ● Collaboration ● Communication ● Self-direction ● Visual learning ● Information literacy
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	<ul style="list-style-type: none"> ● Global and cultural awareness <p>To what extent do you agree with the following statements?</p> <ul style="list-style-type: none"> ● Our school has established 21st Century Skills as learning standards for all students. ● Our school has clearly communicated to all stakeholders its expectations that schools will integrate 21st Century Skills into the learning of all students. ● Our school has revised all curricula to align with the 21st Century Skills. ● Our school has developed model lessons that demonstrate how the 21st Century Skills should be integrated into each of the content areas. ● Our school is provided with access to digital content and resources that are aligned to the 21st Century Skills. ● Our school has systems in place that support in our integration of 21st Century Skills into the curriculum and into our instruction. ● Teachers in our school are provided time to work together to redesign lessons to integrate 21st Century Skills. ● Our school has provided teachers with access to reliable, unbiased sources that accurately describe and rate digital resources for potential use in their classroom. ● Teachers in our school are provided the resources and support needed to redesign classrooms into 21st Century learning environments. ● Our school is assessing students in their attainment of 21st Century Skills. ● Teachers in our school report students' attainment of 21st Century Skills separately from the students' achievement in the content areas. ● The assessment of students' 21st Century Skills is accomplished largely through teachers' use of performance assessments (e.g. rubrics and observations) within the classroom. ● At this time our school does not assess students' 21st Century Skills.
Felt Accountability	
	<p>To what extent do you agree with the following statements?</p> <ul style="list-style-type: none"> ● Our school has high expectations for all students.

	<ul style="list-style-type: none"> ● Teachers in our school set high standards for student work in their classes. ● Our school makes it a priority to help students find the best ways to achieve their learning goals. ● Our school is focused on improving performance on measures of student achievement for this year. ● Meeting targets for student progress is a priority in our school. ● Helping students reach targets for mastery of important skills and content is a priority for our school.
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Stage 2: Create a Change Team

The NRHS instructional leadership team was chosen by the principal and deputy superintendent to play the role of change team for this project. This change team included department leaders from throughout the high school as well as a representative from the digital learning department. This change team engaged with an education consultant (Julie Wilson of Institute for the Future of Learning) in bi-monthly coaching sessions to assist with the implementation of personalized learning.

Stages 3 and 4: Assess Personalized Learning and Relational Coordination from the Perspective of Key Stakeholders

A professional development workshop was held in October 2018 for school administration, the digital learning team, school psychologists, guidance counselors, special education teachers, specialists, and core academic teachers. The workshop was jointly led by the education consultant, the Brandeis RCRC Team, Learn Launch Institute/MAPLE and school administrators. The purpose of the workshop was to introduce personalized learning to a larger group of stakeholders, learn to use RC to support the implementation of personalized learning. A secondary purpose of the workshop was to collect baseline data on RC, Personalized Learning, 21st Century Skills and Felt Accountability baseline. After a large group introduction to Personalized Learning and Relational Coordination, participants self-selected into smaller mini-workshops to learn about each of these topics in more depth.

The workshop included the following learning objectives:

- Understand personalized learning and explore how personalized learning relates to their approach to teaching
- Understand the process of relational coordination and how it can support the coordination challenges of student centered learning in general, and personalized learning in particular
- Engage in relational mapping exercise and identify the stakeholders involved in personalized learning, including students and families

During the relational mapping exercise, participants chose student centered processes including placement, managing student anxiety, student progress communication, the IEP process and student discipline. Parents were included on all maps highlighting the significance of parents from the perspective of participants. Parents were most frequently represented as having moderate, weak or missing ties with stakeholder groups inside the school building. The only strong parent tie was shown on the Student Anxiety map, where strong, moderate and weak ties were all drawn between parents and students indicating a wide range of variability in the strength of these ties with parents. Participants were invited to use relational mapping to explore a coordination challenge - interestingly, the processes they selected focused on student placement, student progress and social-emotional challenges rather than focusing on curriculum development or instruction.

Personalized Learning

Several small groups formed to brainstorm and develop a shared definition of personalized learning. Participants were asked to first brainstorm a list of words that describe personalized learning - from their individual perspectives. Next, groups discussed their respective word lists and developed shared definitions of personalized learning. Results are shown below.

**PERSONALIZED LEARNING DEFINITIONS DEVELOPED BY PARTICIPANTS
PROFESSIONAL DEVELOPMENT WORKSHOP OCTOBER 2018**

- *Personalized learning gives each individual student the opportunity to utilize their strengths, interests and learning styles to meet common goals and standards as applied to the curriculum.*
- *Individual differentiated choices within the standards.*
- *Personalized learning is about having each student select important goals to enrich their educational outcome by using creativity, respect and self-direction, as coordinated by their strengths and differences.*
- *Meeting the needs of individual students by speaking to their interests through selected assessments that identify their strengths and weaknesses.*
- *Personalized learning is focused on the needs of individual students and integrating their learning of 21st century skills in an interdisciplinary fashion. It is often project based and self-paced.*
- *An education based off of ownership, understanding, interests, choices and passion using the 21st learning skills.*
- *Personalized learning is giving each student the resources, tools, and support to pursue educational goals at their own pace while connecting and centering their learning around things they are curious and/or passionate about.*
- *Personalized learning is when students have more options, based on their individual skills and interests, and work with their teachers to provide meaningful learning opportunities and outcomes.*
- *Personalized learning is giving students the freedom to choose how they want to learn, not what they want to learn, in order to help them succeed by using strategies and employing tools that work best for them.*

During two mini-workshops, participants engaged in small and large group discussions facilitated by the education consultant, focusing on personalized learning and its application in practice. During both sessions, participants identified barriers to implementing personalized learning approaches, including a lack of confidence in school administrators. They also expressed confusion about how best to measure personalized learning in the context of current accountability standards. This was reflected in specific comments made by participants during small and large group discussions.

This [personalized learning/RC initiative] seems like the flavor of the month. This administration has a history of initiating initiatives only to have them fall off the radar in a few months. – NRHS Teacher (Workshop Participant)

Standardized testing requirements do not align with this method [personalized learning]. How will we [teachers] be held accountable? If the administration is supporting this, are they prepared to take a hit on test scores so we can focus on meeting student needs? – NRHS Teacher (Workshop Participant)

Two key takeaways from these sessions included:

1. Lack of clarity regarding what personalized learning looks like in action
2. A general view of personalized learning as taking place within traditional disciplines as opposed to being an interdisciplinary learning approach.

Relational Coordination

Relational coordination is a mutually reinforcing process of communicating and relating for the purpose of task integration. It is assessed from the perspective of multiple stakeholders involved in a particular work process. The Relational Coordination Survey is a fully validated, unbounded measure of team effectiveness coordinating complex, interdependent work in time constrained and changing work environments.

Baseline survey data to assess relational coordination and other measures of interest were collected in two waves, presented below. The first wave, Survey A was collected in October 2018 and the second wave, Survey B was collected in June 2019. As shown in Table 2 below, the total baseline survey response rate across all workgroups was 90% (n=84). Workgroups that completed the survey include Core Academic Teachers (n=39), Specialists (n=21), Special Education Teachers (n=16), Guidance Counselors (n=3), School Psychologists (n=1), Digital Learning Team Members (n=2) and School Administrators (n=2). Workgroups not invited to participate in this survey include Paraprofessionals, Teacher Leaders, District Administration and Parents/Caregivers.

Table 2: Response Rates Among Workgroups Invited to Participate in Surveys A and B

Workgroups	Survey (A)		Survey (B)	
	Respondents (%)	Total Invited	Respondents (%)	Total Invited
Core academic teachers	39 (97.5)	40	29 (56.9)	51
Digital learning team member	2 (66.7)	3	1 (33.3)	3
Guidance counselors	3 (60.0)	5	1 (20.0)	5
School administrators	2 (100.0)	2	1 (50.0)	2
School psychologists	1 (50.0)	2	2 (66.7)	3
Special education teachers	16 (100.0)	16	12 (85.7)	14
Specialists (music, art, phys. ed, media)	21 (84.0)	25	6 (66.7)	9
Teacher leadership	-	-	6 (85.7)	7
Total	84 (90.3)	93	58 (62.1)	94

The survey questions were organized into three sections. In the first section for Relational Coordination, the survey asked participants seven questions which investigate the frequency, timeliness, accuracy, problem solving characteristics of the communication with their peers, other workgroups, and parents as well as levels of shared goals, knowledge and mutual respect. The Relational Coordination Index is a positive ascending index, where 1 is the lowest score and 5 is the highest.

Tables 3 and 4 show the RC data for Surveys A and B, with the RC scores proportionally weighted by the number of staff in each group. Ratings are presented *by* the workgroups in the leftmost column *about* each of the workgroups listed across the top row.

Table 3: RC matrix for Survey A with RC scores proportionally weighted

Ratings by Workgroups	Rating About										
	ACAD	DIGIT	GUIDE	ADMN	PSYCH	SPEED	SPECI	PAREN	TLEAD	PARA	DISTR
Core academic teachers [ACAD]	3.77	3.06	3.37	3.22	3.42	3.66	3.24	3.25	3.63	3.44	3.18
Digital learning team member [DIGIT]	3.21	3.93	3.57	3.29	3.50	3.50	3.00	3.57	3.07	2.86	3.29
Guidance counselors [GUIDE]	3.24	3.14	4.95	4.33	4.67	3.76	3.43	3.24	2.81	3.43	4.29
School administrators [ADMIN]	3.71	3.71	4.21	4.36	4.07	4.00	3.79	3.57	4.00	3.36	4.57
School psychologists [PSYCH]	4.29	4.14	4.57	4.57	4.71	4.71	4.29	4.43	4.29	4.29	4.57
Special education teachers [SPEED]	3.89	3.23	3.93	3.64	4.25	4.38	3.82	3.59	3.58	3.96	3.67
Specialists (music, art.) [SPECI]	3.02	3.07	3.31	3.26	3.20	3.27	3.38	3.17	3.43	3.01	3.17
Parents/caregivers [PAREN]	-	-	-	-	-	-	-	-	-	-	-
Teacher leadership [TLEAD]	-	-	-	-	-	-	-	-	-	-	-
Para-Teachers [PARA]	-	-	-	-	-	-	-	-	-	-	-
District Administrator [DISTR]	-	-	-	-	-	-	-	-	-	-	-

Table 4: RC matrix for Survey B with RC scores proportionally weighted

Ratings by Workgroups	Rating About										
	ACAD	DIGIT	GUIDE	ADMN	PSYCH	SPEED	SPECI	PAREN	TLEAD	PARA	DISTR
Core academic teachers [ACAD]	3.67	3.26	3.12	3.21	3.19	3.61	3.32	3.24	3.61	3.47	3.14
Digital learning team member [DIGIT]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Guidance counselors [GUIDE]	3.14	2.57	4.43	3.86	4.57	4.00	3.14	2.57	3.43	3.14	3.86
School administrators [ADMIN]	4.14	4.00	4.86	5.00	4.71	4.43	3.86	4.00	4.29	3.71	5.00
School psychologists [PSYCH]	3.36	3.71	4.43	3.93	4.79	4.29	3.57	3.64	3.71	3.79	4.00
Special education teachers [SPEED]	3.67	3.43	3.76	3.57	4.12	4.12	3.44	3.65	3.46	3.94	3.48
Specialists (music, art ...) [SPECI]	3.07	3.07	3.36	3.19	3.45	3.52	3.31	3.07	3.24	3.00	3.00
Parents/caregivers [PAREN]	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.29
Teacher leadership [TLEAD]	3.14	3.12	3.12	3.05	3.17	3.17	2.88	2.88	3.52	3.12	3.02
Para-Teachers [PARA]	-	-	-	-	-	-	-	-	-	-	-
District Administrator [DISTR]	-	-	-	-	-	-	-	-	-	-	-

Testing Internal Consistency and Construct Validity for Survey Indices

Relational Coordination is a well-established tool, which has been validated in various fields and across multiple populations. Accordingly, internal consistency testing for the RC index on both Survey A and Survey B shows high internal consistency with Cronbach Alpha values of 0.90 and 0.92 respectively. The factor loadings for the RC survey questions indicate that all questions load onto one factor in both surveys.

An index was developed to summarize Personalized Learning questions. The index encompassed 9 questions, where answers were recoded to create a positive index with 1 as strongly disagree and 5 as strongly agree. The internal consistency testing for the newly developed index showed a Cronbach Alpha of 0.88 for Survey A and 0.92 for Survey B. Both values surpass the exploratory benchmark of 0.7, making them valid indices. Exploratory factor analysis shows the new index to load into one factor with an eigenvalue of 4.11 for analysis of answers from Survey A and 5.25 for analysis of answers from Survey B.

Similarly, an index was developed to summarize the Felt Accountability questions. The index encompassed 7 questions and the answers were recoded to create a positive index with 1 indicating strongly disagree and 5 indicating strongly agree. The internal consistency testing for the newly

developed index showed a Cronbach Alpha of 0.92 for Survey A and 0.94 for Survey B. Both values are well above the exploratory benchmark of 0.70. Exploratory factor analysis shows the Felt Accountability index loads into one factor with an eigenvalue of 4.44 for Survey A and 5.03 for Survey B.

Mean RC Scores by workgroup are shown in Table 5 below. The RC Team Score across all workgroups is 3.46/3.47, reflecting overall moderate relational ties across the seven dimensions. Overall, workgroups reported higher scores for frequent communication (3.94/3.92), indicating that the frequency of communication about the personal learning needs of the students is satisfactory, that is, neither too much, nor too little. Lower scores were reported for shared goals (2.99/3.00), timely communication (3.21/3.30) and accurate communication (3.34/3.41).

Table 5: Difference in means of the RC Index and 7 dimensions between Survey A and Survey B

Dimension/Index*	Survey A	Survey B
<i>Frequent Communication</i>	3.94	3.92
<i>Timely Communication</i>	3.21	3.30
<i>Accurate Communication</i>	3.34	3.41
<i>Problem Solving Communication</i>	3.61	3.56
<i>Shared Knowledge</i>	3.51	3.34
<i>Shared Goals</i>	2.99	3.00
<i>Mutual Respect</i>	3.65	3.74
Relational Coordination Index	3.46	3.47
Felt Accountability Index **	3.53	3.48
Personalized Learning Index**	2.81	2.76

(*) There was no statistical significance difference between the average means reported in Survey A and Survey B.

(**) The scale for the questions were flipped into positive ascending scale where 1 is strongly disagree and 5 as strongly agree, to allow comparison with the well-established RC index.

Bivariate analysis of the means of scores in Felt Accountability and Personalized Learning indices showed **no** statistically significant difference between Survey A and Survey B, which was expected as there were no changes to existing policies, nor adoption of new interventions/changes in the work environment. Similarly, the Relational Coordination Index and its seven dimensions showed no statistically significant changes between Survey A and Survey B.

Therefore, responses from both surveys were combined to estimate the impact of Felt Accountability and Relational Coordination on Personalized Learning using a mediation regression model.

Relational Coordination, Felt Accountability and Personalized Learning

This pilot study represents an attempt to gain a deeper understanding into the relationship between Felt Accountability, Relational Coordination and Personalized Learning. Consistent with our hypotheses, a mediation regression model was conducted to investigate whether Felt Accountability impacts Personalized Learning through its impact on Relational Coordination. In other words, the model tests the hypothesis that Felt Accountability will stimulate teachers and staff to engage in Relational Coordination with each other to personalize the learning experiences of their students.

The mediation model was developed and tested using three steps. First, a regression model was developed and tested to determine if the hypothesized independent variable Felt Accountability predicts the hypothesized dependent variable Personalized Learning. Then, a second regression model examined if the hypothesized mediator Relational Coordination is also predicted by the independent variable Felt Accountability. Finally, both the mediator Relational Coordination and the independent Felt Accountability variables were used to predict the dependent variable Personalized Learning. To confirm mediation, the independent variable Felt Accountability would have to show reduced impact on the dependent variable Personalized Learning when Relational Coordination is included in the model.

Table 6 shows the three mediation regression models to estimate the impact on the Felt Accountability and Personalized Learning Indices through the Relational Coordination Index, controlling for different workgroups.¹

Table 6: Mediation Regression Models Estimating Felt Accountability and Personalized Learning Indices through RC Index

Model/ Mediation Step	Model (1)			Model (2)			Model (3)		
	Personalized Learning			Relational Coordination			Personalized Learning		
Variables/ Covariables	Coefficient	t	P	Coefficient	t	P	Coefficient	t	P
Workgroups									
Core academic teachers (ACAD)		Ref.			Ref.			Ref.	
Digital learning team members	0.27	0.83	NS	0.06	0.17	NS	0.25	1.20	NS
Guidance counselors	-0.10	-0.23	NS	0.18	1.46	NS	-0.18	-0.45	NS
School administrators	-0.03	-0.06	NS	0.45	1.59	NS	-0.22	-0.63	NS
School psychologists	0.07	0.33	NS	0.42	4.53	***	-0.11	-0.51	NS
Special education teachers	-0.02	-0.12	NS	0.31	3.10	**	-0.16	-1.02	NS
Specialists (music, art, PE)	0.16	1.12	NS	-0.20	-1.64	NS	0.25	1.62	NS
Teacher leadership	-0.25	-0.72	NS	-0.03	-0.07	NS	-0.24	-0.72	NS
Felt Accountability Index	0.32	3.88	***	0.40	6	***	0.14	1.71	NS
Relational Coordination		-			-		0.44	3.86	***
Constant	1.63	0.29	***	2.02	8.25	***	0.74	1.98	*
R ²		0.14			0.43			0.21	
P value		**			***			***	

(*) P < 0.05 (**) P < 0.01 (***) P < 0.001, NS = non-significant

(1) the multivariate regression used P-weighted scores to adjust for differences in response rates among different workgroups.

The first mediation regression model shows that Felt Accountability has a positive impact on Personalized Learning with high statistical significance (p<0.001). Similarly, Felt Accountability positively predicted Relational Coordination (p<0.001). Additionally, when controlling for the variation between different workgroups, two workgroups were found to experience higher Relational Coordination when compared to the reference group Core Academic Teachers. These two workgroups were School Psychologists and Special Education Teachers; both roles require

coordination with others to execute their job. This significant variation indicated that newly adopted policies and interventions should invest more effort on other workgroups.

Finally, the third model supports the hypothesis that Felt Accountability influences Personalized Learning through its impact Relational Coordination. When both the independent variable Felt Accountability and the mediator Relational Coordination are included in the Personalized Learning model, Felt Accountability becomes a less significant predictor of Personalized Learning ($p=0.09$). Hence, we can conclude that Felt Accountability impacts Personalized Learning by increasing Relational Coordination with others.

Stage 5: Reflect on Findings and Design Interventions

Survey A data were shared with stakeholders during three sessions, beginning with school leaders, followed by the change team, and then the departments represented by the change team. A summary of each review is presented below.

Data Debrief with Leadership Team

The facilitator led a virtual debrief session with the school leaders, who reviewed the data for the first time during the session as a team. In reviewing the response rates, they observed that Teacher Leaders may not have identified as such on the initial survey, that they are also Core Academic Teachers and appeared to have identified themselves with this group when responding to Survey A. This observation could explain the increase in Teacher Leader participants in Survey B.

When presented with the RC data, the leadership team observed that the data reflected some siloed thinking and within department focus. They also observed that this was in line with feedback that they had received during the Professional Development session. They observed that there is a lot of learning taking place and the school may not be accessing this as well as it could. In terms of Relational Coordination among teachers and staff, the leadership team agreed the teachers have a lot of mutual respect and that this is a strength.

With respect to shared goals, school leaders wondered if school staff fully understood where short-term goals aligned with long-term goals and the value of these goals. They observed that the greatest opportunity for improving RC is on the dimension of shared knowledge. The low score on shared knowledge suggests that school staff do not feel they understand their own roles and each other's roles in the implementation of Personalized Learning.

In reviewing Felt Accountability, the leadership team was surprised that there was a lack of agreement around high expectations for students and having measures for student achievement. They noted that this data was unexpected since the school has high achievement and college placement measures and they wondered if there was a lack of clarity around assessing students individually. They identified an opportunity for increased time for feedback on standards. Next, the team reviewed the 21st century skills data and observed that the school has been working on collaboration and this is reflected in the data. They identified creativity and innovation and student self-direction as good places to start improvement efforts.

The leadership team data review closed with a discussion about the change team. They observed that designing the team meeting schedule to occur during school time, PD days, and faculty meetings would be critical to engage the team members needed to bring about the change they

hoped to achieve. School leaders decided to bring the existing instructional leadership team on board as the change team. This change team included a small group of school administrators, core academic teachers and specialists.

Data Debrief with the Change Team

Data were shared with the change team (the instructional leadership team) in one of their regular meetings, led by the principal with the deputy superintendent and head of learning technology in attendance. The principal started by setting the stage, describing multiple initiatives currently going on including UBD, Universal Design, Socioemotional Learning and one-to-one devices for freshmen. He explained why he and the other leaders wanted this instructional leadership team to review the data on personalized learning before sharing with the faculty. He did not directly mention RC or felt accountability in this introduction.

The education consultant then laid out the road map, set expectations, and requested permission to be a strict time keeper, then dove into sharing results with minimal narrative, asking: "What jumps out at you? What do you see?" The first comment focused on the strongest dimension of RC, with one member noting that: "Mutual respect came in high, which makes me think we can solve any problem." The team acknowledged the weak scores for shared goals and shared knowledge, noting that the scores may be indicative of the nature of the school context, where staff may be working on different initiatives with different goals and where knowledge sharing may be limited due to student confidentiality and the number of students attending the school. For example: "The shared goals score does not reflect that we are heading in different directions necessarily, rather it's the different work we are doing."

The change team noted that the RC results describing the quality of communication were lower than they expected. They highlighted that the phrase "all students" in the questions may have contributed toward the unexpected results, considering the school context, where teachers may have limited information about some students, again related to student confidentiality and the number of students they teach. They noted that in some cases, it is not possible to share information with all of the school staff, nor did they necessarily know which teachers worked with which students, and this could impact the ability to communicate with each other about individual student learning needs. The team acknowledged that they needed a better understanding of what personalized learning is. They also acknowledged the relevance of relational coordination for their work: "What are we really working on as a team, as a group, as a school? On a day to day basis, this can be lost and a big part of this discussion is everyone having an idea of what's happening."

The consultant then shared the Felt Accountability data, which addressed teachers' and staff's sense of personal accountability for student success. The change team noted that the scores were relatively low, as were the RC scores, and some of them were surprised. "I'm seeing just over half of the people saw meeting the targets for student progress as a priority ... I'm seeing high expectations for students and I'm wondering why it's only 44% who agree? What's the alternative? To say 22% disagree, that's a big chunk."

Some team members reflected that the definition of student success is currently in flux, and therefore lacking a clear definition. They also noted there is ambiguity in assessment tools and in some cases there are competing types of assessments. The conversation that followed pointed out several challenges: "We do an assessment on a standard scale and we also have our own measures... it's difficult to work for two masters." "The student may earn a number grade, and is meeting expectations, but we are not calling it mastery - 'exceeds expectations' is as close as we get

to 'mastery.'" "Those codes are interpreted so many different ways. Something that is mastery to me may not be for someone else." "There has been some work within some departments to develop standards." "There's a natural ambiguity with standards bases. We are moving closer to that and now that we are looking at data collectively, that may speak to [the results we are seeing here]." The team questioned whether the data reflected the school's readiness to integrate personalized learning, or whether they were already using personalized learning.

When reviewing the 21st century skills data, the team identified opportunities for improvement in self-directing, innovation and creativity as well as cultural awareness. The team again identified challenges with considering "all students." They noted differences in learning, with one teacher sharing, "I teach different kids and there are some that are really going to struggle. They are doing the best they can but you can't say that *all* students are going to be able to achieve these integrated skills." The team reflected that there is insufficient time for feedback and reflection and that sometimes they need to take action without having all of the information they felt they needed. They noted that there were many skills to consider in the 21st century skills list and it was difficult to remember all of the skills as they moved through the questions and they wondered whether this impacted the responses.

The initial plan was to share the data with the rest of the faculty in a large group setting but the team felt there would not be sufficient time with this approach. They instead suggested for themselves to share the data at their department meetings, to in effect, "own the data." This suggestion was supported by school leaders and they offered to change school schedules to accommodate this plan. Additionally, the principal offered to create a video to share at the department meetings, introducing the project and objectives and providing background on RC and personalized learning.

During this session, one teacher shared that she knows one of her students plans to be a nurse and the student shared that she valued studying Spanish because she felt it would help her with her career choice. The teacher observed that knowing that the student wants to study nursing inspired her to consider alternate vocabulary units, for example, changing a unit on a vacation to one focused on biology. She added that making the curriculum relevant to this student's interest and career choice would make the work more relevant and interesting to the student. The teacher shared that this was a version of personalized learning that had great meaning to her as a teacher and she felt for the student, as well. Further, it was through her conversation with the student and getting to know about the student's interests on a personal level, that lead to this realization of how personalized learning could be supported at NRHS, contributing toward the change team's plan to create a platform to record and share student goals with teachers and staff.

At the conclusion of the survey debrief meeting, the change team acknowledged that, while they had the MAPLE definition for personalized learning, there was a need to develop a customized definition for NRHS. Inspired by the language teacher's story of personalized learning in action, the team identified a second focus for their intervention, to develop a new process for students, beginning with the incoming freshman class, to identify a personal goal and for this goal to be known by their teachers. The incoming class would be the first class to have one-to-one devices and the team suggested that using this technology could support this second intervention plan.

Data Debrief with Departments

In response to the first priority activity, change team members returned to their departments to share the survey data and engage with their departments in developing a definition of personalized learning, the results of which are included below.

Department	Personalized Learning Definition
Science	Personalized learning is when students have more options, based on their individual skills and interests, and students work with educators towards meaningful learning goals, opportunities and outcomes.
Digital Learning	<p>Prioritizes helping students find the best ways to achieve their learning goals - This is an adjunct to personalized learning</p> <p>Personalized learning gives the student the opportunity to make choices that align with their strengths, while giving the teacher the tools to give the students effective choices.</p> <p>Finding a way to set students on a path to be self-directed in the way they learn. Also combining this with having students reach our expectations and hitting the standards.</p> <p>Personalized learning is helping students acquire knowledge in ways that best suits their needs and builds on their strengths through a variety of learning experiences, instructional approaches and support.</p>
Social Studies	Personalized learning is giving each student resources, tools, and support to pursue educational goals at their own pace while connecting and centering their learning around things they are curious and/or passionate about.
English	Individualized with differentiated choice and within the standards.
Math	Personalized learning gives each individual student the opportunity to utilize their strengths, interests, and learning styles to meet common goals and standards as applied to the curriculum.

In response to the second prioritized activity, creating a new process to help students develop and share personal goals, the change team planned to connect with the school’s advisors, coaches, students and other stakeholders that they identified to form a new change team to create a new advisory model. The team planned to use newly available technology to build upon the current advisory process.

The change team created a survey for faculty and students, inquiring, “to what degree do you talk about goals with students?” There were also questions about when and where these conversations occurred. Students shared that they most often discussed goals with teachers and coaches and that their goals were most frequently related to academics and athletics, with a small proportion related to arts and post-secondary education. The majority of students noted that the goals were not written.

After considering this additional information, NRHS leaders decided to implement a change in their advisory structure and process. While they typically had 10 advisors in this group, they planned to have 8 advisors for the incoming freshman class, along with a new advisory group coordinator role, which was created and filled with a former advisor. NRHS leaders also observed that this new process and boundary spanning coordinator role would provide an opportunity for teachers to see connections between their own professional development goals and the student goals, impacting how they structured classes.

The change team discussed how a student's interests and aspirations would likely change over the course of four years attending high school and how this process might begin with the initial advisory meeting and could grow to include all teachers and staff in the student's learning network. Also, the process to record and share the student's goal could expand, to include academic goals, social goals, extracurricular athletic and arts related goals, and so on. In this way, the team recognized the process of enabling the student to share and revise a goal could support an iterative model of change in the school itself.

Building Shared Goals. During a department leader meeting later in the school year, school leaders recognized the need to get more teachers involved in MAPLE, to have an opportunity to see personalized learning in practice. They also recognized that integrating personalized learning into the NRHS curriculum is a process, requiring time to reflect and consider what personalized learning is, and what it is not, and to consider how it will change over time. They observed that an understanding of personalized learning isn't something that they could deliver in a professional development day or text, that it is an ongoing process. Leaders also recognized the need to learn how to best leverage technology to enable personalized learning, with attention to the communication opportunities.

Building Shared Knowledge. School leaders talked about student engagement and integrating changing needs into the curriculum, with one leader noting, "we're both curriculum coordinators and teachers.. [with the objective for students] to be engaged enough to gain something from it they can take with them for life." Developing collaboration opportunities between school guidance staff and teaching staff would allow for an exchange of information about student interests and strengths to enable teachers to customize lessons and activities for personalization.

School leaders reflected that integrating personalized learning is difficult and that the process may have been made more challenging with how it was initially introduced to a smaller group, leaving some members of the school community unfamiliar with the objectives and progress. This approach may have led to hesitation in the school staff to fully support taking on the work to integrate personalized learning. School leaders sought to address this challenge by introducing relational coordination and engaging faculty and staff in the process. This approach engaged the majority of the school staff while excluding some significant stakeholders in the school community, including parents, paraprofessionals, district leaders and students that were unable to participate in workshops, which were held during professional development sessions.

As the school year came to an end, school leaders decided to utilize the last professional development day, which coincided with graduation day, to revisit personalized learning and relational coordination, to remind the participants about activities focused on the theory and approach that were held throughout the year and the outcomes of these activities and to provide context for personalized learning. The final workshop began with a review of the school activities

that focused on RC and personalized learning, beginning with the leadership team’s attendance at the MAPLE Conference, through the workshops and meetings to socialize RC and personalized learning and design interventions, the final workshop to assess progress and readiness and a connection to the following school year, when all incoming freshman would have Chromebooks and the new advisory model would begin.

School leaders followed this timeline review with the MAPLE definition of personalized learning,³ presented in *Figure 5*.

Figure 5

Personalized Learning

MAPLE Definition

Personalized learning seeks to accelerate student learning by **tailoring the instructional environment – what, when, how and where students learn** – to address the individual needs, skills and interests of each student.

Within a framework of established curriculum standards and high expectations, personalized learning motivates students to reach their goals. Students take ownership of their own learning and develop deep, personal connections with each other, their teachers and other adults.

Technology is necessary to implement personalized learning effectively, affordably, and at significant scale. Teachers leverage technology to gain detailed and timely knowledge of their students that guides instruction. Effective use of technology allows teachers and students to focus more on creativity, critical thinking, and collaboration.



Based on feedback from staff, school leaders suggested using some of the workshop time to focus on relating personalized learning with UDL. Participants engaged in a workshop to identify similarities and differences between these strategies and followed with an engaging workshop where participants shared a classroom activity and reviewed this activity against the MAPLE definition of personalized learning to identify strengths and opportunities for improvement.

This workshop proceeded with a review of RC, highlighting the school’s progress through Stages 4 and 5 in the RMOC, and followed with workshops for Shared Goals and Shared Knowledge. Themes identified during the Shared Goals session included follow-up on action plans with data, identifying strategies to increase student motivation and engagement including more student directed content, identifying alternate means for students to demonstrate mastery of subjects and lessons, and to integrate the use of technology in the curriculum.

The new advisory team coordinator then shared the new advisory model to be introduced in the fall and the session closed with participants completing Survey B. As with Survey A, Survey B was also

³ LearnLaunch Organization (2018), *Leadership for Personalized Learning: A Crosswalk between the Massachusetts Professional Standards for Administrative Leadership and the JFF/CCSSO Leadership Competencies for Learner-Centered, Personalized Education*.

emailed to the entire school faculty, to include all school faculty and staff members that were unable to attend the workshop.

Stage 6: Assess Impact and Refine as Needed

Leadership at NRHS has committed to conducting periodic assessments to evaluate progress, and support continuous quality improvement cycles over time, as RC patterns evolve and as new stakeholders become engaged. Additionally, the research team has collected qualitative interview and observational data from key informants at NRHS. The summary and recommendations below are based on a content analysis of those interviews in addition to meeting and workshop observations.

3. Themes from Stakeholder Interviews

Semi-structured interviews and focus groups, see Appendices B and C for protocols, with key stakeholders, including school leaders, curriculum leaders, and a small group of teachers and staff from the high school and middle school in the North Reading school district identified several themes, including:

- **Lack of clarity around personalized learning.** Confusion around the definition of personalized learning continued through the duration of the school year, including an understanding of the process to integrate personalized learning into the curriculum, benchmarks for success, and questions around how personalized learning fits into the school context, standards and other district initiatives, including UDL and SEL. There was also confusion around where to apply personalized learning, with some feeling that it may be intended for struggling students. There were some gaps in sharing information from the professional development sessions with teachers and staff that did not attend all sessions, including middle and elementary school faculty that participated in some PD workshops. In one development session midway through the year, a participant noted, “We wonder about MAPLE and personalized learning, because we haven’t heard of these and we wonder if there will be district support?” and during a session on the final day of the school year, a workshop participant noted, “I would like to have a clear, specific and actionable understanding of personalized learning.”
- **Strong emphasis on technology.** The technology emphasis was evidenced by observations shared, including a teacher that noted numerous offerings for integrating technology into the curriculum. School staff were uncertain about methods to successfully integrate technology into all subjects and teaching staff wondered if technology was being utilized to improve student learning or to satisfy a requirement that the technology was used.
- **Need for more collaboration time.** A focus group participant suggested sharing more information electronically, to provide more time during meetings for collaboration. In an example of a successful outcome of this approach, demonstrating high RC, an elementary school teacher in the district shared how her school developed a makerspace. She noted that developing this successful learning opportunity involved “everyone” at the school including counselors and paraprofessionals in “professional learning communities” that

were held in lieu of faculty meetings, with parents participating by providing materials and funding for the space. This is especially notable, in that paraprofessionals and parents were not included in the professional development workshops about personalized learning and relational coordination.

In support of more collaboration time, a workshop participant wondered, “What if every teacher has a block where they could float and spend time in other classrooms and integrate the curriculum?” and in further support of this suggestion, a participant in another session shared, “[what we need is] more people coming together.”

- **Curiosity about resources and training to support personalized learning.** This curiosity included learning more about what is available within the district libraries and electronic media and resources. Focus group participants shared an interest in training and professional development in best practices for using technology to enable personalized learning and to better understand what personalized learning looks like in different subjects. Participants were also curious about opportunities to redesign the school day schedule, to consider semester classes to free time for collaboration and customization of subject and lesson choices for personalized learning.

During a meeting with the change team, the group was discussing the proposed new advisory model and recognized that there were important stakeholders outside of the school building that were not participating in this effort and not being heard. One example noted was the coaches that many students interacted with, often over multiple years, and who are often very familiar with student goals and interests. The change team’s interest to identify and engage a variety of stakeholders in the school community, from inside and outside of the school building, is an opportunity for additional training to support personalized learning.

- **High level of respect for colleagues and school leaders and a great appreciation of their students.** Reflections shared during workshops, interviews and focus groups highlighted the mutual respect and appreciation school leaders, teachers and staff held for one another. It was very evident that school staff appreciated the opportunity to share time and learning with one another, with one focus group participant suggesting “more time to collaborate to watch other people teach, to experience the incredible teachers that we have in this school district.” School staff appreciates school leadership, with a focus group participant noting, “I’ve done a lot of advocating with best practices, and the admin has listened about what should be happening or what resources are needed.” School staff also greatly appreciate the students, with another participant noting, “Teachers really care about who [the students] are and what their needs are.”

4. School Structures Assessment

Relational coordination theory and research have shown that the strength of relational coordination depends on the existing organizational structures. Depending on their design, they can strengthen relational coordination or they can weaken it. Some of the most influential structures discovered thus far include the following:

- Selection for Teamwork

-
- Training for Teamwork
 - Relational Job Design
 - Shared Accountability
 - Shared Rewards
 - Shared Conflict Resolution
 - Boundary Spanners
 - Shared Meetings
 - Shared Protocols
 - Shared Information Systems

These structures that support relational coordination are also likely to support personalized learning, given that relational coordination is a significant predictor of personalized learning. To assess the existing school structures, a member of the evaluation team interviewed a district leader at the beginning of the pilot study using the Organizational Structures Assessment Tool. The following sections summarize our findings.

Selection for Teamwork

Selection criteria for teachers at NRHS focus first and foremost on the candidate having the required licensing, training, education and experience for the specific job being filled. In addition there is some consideration of teamwork capacity though this criteria did not seem to be quite as well established. “We always say the days of going into their classroom and closing the door are over. I think we have some questions. We ask about their ability to work with a team.” Even without a highly systematic approach for assessing teamwork capacity, NRHS may be getting more collaborative teachers over time. “A lot of the newer hires are more collaborative. I think it's what folks now expect when they go into teaching.”

For non-teaching staff, there is a great deal of variation. Paraprofessionals often come in with licenses and master’s degrees, though it’s not clear whether selection criteria include teamwork capacity. “For custodial, it's probably 'what's your experience?' Administrators have higher standards to meet.” While administrator hiring standards are high, it is not clear whether administrator selection criteria include teamwork capacity, or the capacity to support teamwork among others.

Training for Teamwork

The primary source of training for teachers occurs in the first year as part of orientation. “The topics include basic professional things like how to read your paycheck, technology in the classroom, licensure, professional responsibilities, educator evaluation where we break down the evaluation process... classroom climate, family communication.” In addition, there is a mentoring program, as well as regular professional development for teachers and staff.

At this point there does not seem to be training for interprofessional teamwork.

Relational Leadership - Supervision, Coaching and Mentoring

Relational leadership is a leadership approach that supports the development of collaborative behaviors through supervision, coaching and role modeling. The mentor program at NRHS provides new teachers with some coaching around collaboration. “Mentor coordinators and the principal together select who is the right mentor for each new teacher. Mentors address all aspects of the job; they peer observe and the teacher has to observe them. It definitely includes how to collaborate.”

There does appear to be a relational approach to leading change at NRHS. “We try to motivate change through professional development and leadership - through everything we do. You get a lot of adopters, then you win over the middle. You let them form book groups, for example. You'll always have resisters. Sometimes you address it through attrition. This is where the bus is going, you need to get on board. But there are more who come on board than you would think. Sometimes there's someone who I never expected would be the champion. We really believe that people can grow. It helps if you hold steady and make it clear this is where the bus is going. If the bus is changing direction every couple of years, it's harder to get people on board.”

However there is not yet a consistent approach to providing relational leadership for teachers at all stages of their careers, and for all stakeholders in the school community, in the sense of supporting the development of collaborative behaviors through supervision, coaching and role modeling.

Relational Job Design

Relational job design occurs when coordination responsibilities are included explicitly in job descriptions. This structure appears to be in the early stages of development at NRHS. “I would say a lot of the jobs include a bullet in there about ‘works well together.’” Some jobs are more focused on coordination responsibilities, whether within or outside the school. “The curriculum leader job design includes involvement in local networks. Math leaders, for example.”

Shared Accountability

Accountability is a huge area of innovation in public schools and NRHS is no exception. “The state accountability system holds us accountable for specific goals, school improvement plans, report cards, and these are all shared on our website and discussed in faculty meetings. We have alignment across district goals, school goals, faculty goals, and team goals. Individual educators have both individual and team goals. Say the accountable issue is seventh grade special ed math, then those seventh grade teachers talk about it and find a way to improve. I'm not saying it all happens that way. What that accountability looks like and whose responsibility it is can vary.” New metrics have been adopted including growth of learning and teacher value-add, at NRHS as well as nationally, in an attempt to isolate the impact of individual teachers on student learning.

There is also a trend toward engaging teachers in learning from each other, which may begin to get at sharing accountability for student outcomes. “To help the teacher figure out ‘how are my students performing on the test’ and ‘how does that compare to other measures for those students,’ and ‘how does that compare to students in the rest of third grade.’ It's not used by us as administrators - rather it's used formatively among the teachers who can compare among themselves.”

“Before it was very much about *your* measures and *your* data, and no one able to see them but the individual teacher. Now it's - *we're all* responsible for all these students and *we all* own the data.

It's not about pitting people against each other. Before, there were grievances about sharing the data, even sharing it at a high level. Unrest about 'you can't share that data.' Some of the change was technology, where now you can look across grade 3 - now it's not my data anymore, it's all of our kids."

"Our former superintendent and I met with teacher leaders, we dealt with those questions head-on and said - I think it's similar to the closed door thing - we have all these things at our disposal. We have to use [these metrics] to serve our kids. They say: I'm a teacher not a data cruncher. But the kids deserve our feedback and our expertise and our analysis. The computer can correct the tests but we now can use our time to analyze the data and decide what to do."

In sum, shared accountability is beginning to emerge at NRHS but, at the same time, individual accountability is intensifying here as it is elsewhere. One question is whether individual accountability can be achieved in a way that does not undermine shared accountability for "all of our kids," thus avoiding the perils of sub goal optimization.

Shared Rewards

There are a number of methods for rewarding teachers and staff individually, by their leaders and by each other. "We do some recognition. We do some things informally. Teacher of the month, picked by students. We give teachers an opportunity to present, maybe an honorarium, for being innovative. Present at the dept of education. Providing equal opportunities for advancement, giving people quasi-leadership roles that will help them get to the next level. Some things are celebrated. We draw on intrinsic motivation and pride. But there is no step or lane advancement, no money involved. In charter schools you can move up the salary scale. Here it's all based on seniority. They do have some horizontal recognition among themselves, teacher of the year I think. The mentoring system is kind of a reward - teachers nominate each other for those roles. It's like being recognized by one's peers."

No methods were evident for rewarding teachers and staff collectively for the performance of their students.

Shared Conflict Resolution

"With teachers, the most common things are domestic issues, feeling disrespected, a voice was raised. Someone spoke to me in a way I considered unprofessional." The primary methods for conflict resolution among teachers is through the grievance process offered by the union. "It takes a lot of time to go through the process. But it can be good to have. Teachers often appreciate the formality and thoroughness of the process. They are heard and listened to. I see it often. So often things could have been avoided had they been listened to at an earlier stage."

Parents have their own conflict resolution processes. "With parents, very often they are not happy with a decision someone made. It might be a grade, a cut from a sports team, a suspension. If they play the discrimination card, then we have to figure that out... In addition to our processes, they have federal and state agencies, including the MA Department of Education. Sometimes it goes to the state on appeal, or sometimes it goes there directly."

There does not yet appear to be a conflict resolution process that spans across all key stakeholders in the school community.

Boundary Spanners

Boundary spanners are an important structure for coordinating work. Kids with special needs often have multiple boundary spanners - special ed teachers, special ed coordinators, guidance counsellors, school adjustment counsellors, and psychologists - sometimes with overlapping roles. "For kids who don't have special needs we have academic teams and principals who coordinate their education. [But] it's not as individualized." This suggests an area of growth toward boundary spanner roles that coordinate around the personalized learning needs for students at NRHS.

Shared Meetings

Shared meetings are another important structure for coordinating work. There are some school wide meetings at North Reading, but much of the coordination of student learning is carried out in teacher-led meetings. "Middle school teachers meet in teams, high school teachers meet in their departments and also in pods. Teachers wanted to meet in their departments but their classrooms were often on different floors, so now the pods include a different mix of people. They are more designed now to get some cross pollination. The teachers value those spaces. They've made them private. It's a teachers only kind of thing, in a good way. There's a teachers' cafeteria for high school and middle school teachers but that's kind of far away so they'll often have lunch in their pods."

There does not appear to be a regular meeting structure that includes all key stakeholders in the school community, or one that includes all key stakeholders related to the needs of a particular student.

Shared Protocols

Shared protocols are another important structure for coordinating work. These are not yet well established at North Reading at the individual student level, except for kids who are deemed to be at risk. "We do have individual learning plans, best practices for all kids, some policies for how to do our work. It's not formalized. We definitely have it for kids who are at risk of failing. But not for all kids. That's really what personalized learning will mean for us, well beyond devices. Every kid will have a personalized learning plan. People don't understand that change yet, but that's our work, starting now."

Shared protocols currently exist in the form of ILPs to coordinate support for students at risk, but not for students more broadly. Under personalized learning, the use of shared protocols will expand.

Shared Information Systems

Finally, shared information systems are an increasingly important structure for coordinating work. "We have a basic database with all the key information. We have one for scheduling as well. It interfaces with our emergency contact systems. A few other information systems that capture grades and communicate with parents. But it's not fully integrated now. And there is no system that connects across students. We are trying to build a system now so we can look at how a student is doing across all the domains."

"Everything collects data but we don't have a way to connect it all together and look at it visually in a meeting. Or to help teachers and administrators make sense of the data. We really need a full

time person for this, not just for start-up but ongoing. And especially for personalized learning. We need to know how to adapt and adjust, based on data, in order for learning to be personalized.”

At NRHS there are many data sources and systems, but these sources and systems are not yet integrated in a way that supports the coordination that is needed.

Summary of School Structures

In sum, there are many opportunities to strengthen existing school structures to better support relational coordination, and in turn to better support Personalized Learning.

5. Strengths and Opportunities for Change

STRENGTHS

Committed, Dedicated Staff

Based on our interviews and observations thus far, it appears that the North Reading High School is a reflective, learning organization committed to providing a first-class educational experience to students and families who make up the larger community. This was evident during the focus groups and interviews with key stakeholders and was also reflected during the professional development workshops, where administrators, staff and teachers were highly engaged.

Organized Student Services

NRHS staff recognizes the strength of organized student services, with one focus group participant noting, “Kids don’t fall through the cracks here. Even if it’s just a small thing, any kids with even a little thing, we say let’s look at this and get them tested. We have good organized services and I really feel that there is a connection.” This reflects observations made during workshops and meetings throughout the year. Teachers, especially, appear to take much pride in their work and students to ensure that their individualized needs are met.

Mutual Respect

Reflections shared during workshops, interviews and focus groups highlighted the mutual respect and appreciation school leaders, teachers and staff held for one another. School staff appear to appreciate the efforts of leadership to engage employees at all levels in the process of building relational capacity and a personalized approach to learning for students at NRHS. High levels of mutual respect were also evident in both waves of baseline RC data, within and across workshops indicating a promising relational foundation for continuing this work.

Curiosity and Motivation for Change

NRHS administrators, staff and teachers share an interest in learning about training and professional development around the use of technology to enable personalized learning. There is also curiosity about opportunities to redesign organizational structures (e.g. changes to the school day schedule) to improve student learning. Additionally, the change team’s interest to identify and engage a variety of stakeholders within the school as well as larger community is likely to offer additional opportunities for personalized learning and better meet the needs of students in the district more broadly.

OPPORTUNITIES

Build Shared Goals and Shared Knowledge

Baseline relational coordination survey data across both waves indicate opportunities to build shared goals and shared knowledge within and across workgroups. These data were supplemented by focus groups and observational data which also reinforced the need for workgroups to better understand each other's roles and the interdependencies among them. The most recent professional development workshop held at the end of the academic year began the process of building shared goals and share knowledge by engaging administrators, teachers and staff in conversations of interdependence and goal setting around personalized learning. While this process has begun, we see clear opportunities to leverage the initial discussions and dive deeper into these two dimensions of relational coordination to support the implementation of personalized learning at NRHS. Activities may also include the formation of a subcommittee representing various roles in the school, including a student perspective, to focus on building relational capacity within and across workgroups.

Cultivate a Shared Understanding of Personalized Learning at NRHS

Administrators, staff and teachers engaged in productive learning workshops to understand and discuss personalized learning and what it means for the NRHS. Themes derived from these learning workshops as well as focus groups and interviews included a need to develop a shared definition and understanding of personalized learning within and across workgroups. This process is well underway as administrators, staff and teachers at all levels of NRHS have begun to develop a vision for what personalized learning looks like in their school. This is also evident in the intentional goal-setting for incoming 9th grade students and coordination of a curriculum that is aligned with those goals. Opportunities exist to engage students in all grades in this process in addition to identifying a framework for student-centered learning that aligns with the needs of NRHS and shared by all teachers, staff and administrators.

Identify and Share Resources to Support Personalized Learning

Reflection and suggestions from school staff highlighted variation in familiarity and knowledge about resources available at NRHS to support personalized learning including technology, library and media resources. An opportunity to develop shared knowledge about resources is to develop a reference guide for staff - and students - with examples of identifying and integrating materials and resources to supplement and personalize lessons and activities.

Develop Organizational Structures to Support Relational Coordination

Based on data collected during interviews, focus groups and workshops, there appears to be several opportunities to leverage existing organizational structures (e.g. policies/practices) to improve coordination and build relational capacity. This includes efforts made to improve the job design process and to hire and train new employees at all levels of the organization for teamwork in a standardized way. Opportunities also exist to cultivate systems of shared accountability and rewards for administrators, staff and teachers and to leverage existing communication systems (shared meetings, shared protocols) for improved coordination around the implementation of a personalized learning curriculum.

6. Summary and Next Steps

Together, the data summarized in this report suggest a common set of strengths and opportunities for the North Reading High School. During this pilot study, researchers have observed a high level of motivation and curiosity on behalf of administrators, staff and teachers to engage in this work to improve student outcomes. There is also a high level of mutual respect within and across workgroups at NRHS and all staff appear to be deeply committed to their students. While still in the early stages of implementing a personalized learning curriculum, NRHS staff are motivated to build on this foundation which has been nothing short of an intentional, data-driven change process thus far. To engage in the next phase of implementation requires leveraging strengths, acknowledging feedback, being honest about weaknesses, and taking deliberate and decisive action to be responsive to threats.

An opportunity for further research could include assessing changes in relational coordination, personalized learning 21st century skills and felt accountability after the implementation of interventions informed by the baseline data. For example, do RC interventions support the implementation of personalized learning at NRHS? Additional research may include furthering our understanding of how psychological safety, felt accountability and RC work together to meet the personalized learning needs of students.

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Appendices

Appendix A: Scheduled RC Coaching Sessions and Workshops June 2018- June 2019

Date	Agenda
9/21/2018	Zoom session with Dan, Patrick, AJ and Jody - planning for 10/5 workshop
9/24/2018	Zoom Session with Jody re: 10/5/18 workshop planning and follow-up email to Dan and Patrick
10/1/2018	Zoom session with NR team and Jody to finalize details for 10/5 meeting
10/3/2018	Zoom session with Andre (LearnLaunch) to prepare for 10/5 meeting
10/4/2018	Call with Dan, check-in on technology and logistics for 10/5 meeting
10/5/2018	WORKSHOP: Fall PD Session at NRHS, Introduce RC and PL, Conduct Baseline Survey Facilitate onsite 10/5 meeting [PD Session] - provide an overview of RC and how it relates to change, conduct survey, facilitate PD sessions (see 10/5 notes)
10/18/2018	Zoom call with Saleema (RCA) to get Julie up to speed on results in prep for NR leadership team debrief on 10/22
10/22/2018	COACHING SESSION: Baseline RC survey data debrief with school leaders Zoom meeting, NR Leadership Team - debrief survey findings, identify next steps [PPT uploaded to Shared Google Drive]
11/14/2018	Phone conversation with AJ - AJ wants to bring Instructional Leadership Team on board as 'change team'
11/15/2018	NR Leadership huddle - discussing and agreeing upon agenda for 11/29 meeting
11/29/2018	COACHING SESSION: Baseline RC survey data debrief with Change Team Instructional Leadership Team Meeting - Review the RC data, identify 1-3 potential areas upon which the school should focus, discuss the roadmap and plan for 12/3 faculty meeting. Group decided to present results to individual teams and report back, rather than have an all-faculty presentation. [PPT uploaded to Shared Google Drive]
12/7/2018	Phone conversation w/AJ to prep for 12/10, and draft agenda
12/10/2018	COACHING SESSION: Debrief department meetings with Change Team Instructional leadership team meeting - debrief feedback from their respective teams on the survey and identify priorities.
12/19/2018	COACHING SESSION: Debrief Change Team meeting NR Leadership Team Zoom Meeting - debrief 12/10 meeting and discuss next steps
2/7/2019	Zoom call - Leadership Check-In (see

	NRHS_LeadershipTeamMtgMinutes_2019-02-07 notes)
4/1/2019	RC debrief call (see Meeting Notes -> Julie Wilson 4-1-19.docx)
4/11/2019	Zoom Call - Call for Julie and Patrick to review and prepare what to present at the RCRC Café
4/16/2019	RCRC Café Tech Check-In
4/18/2019	RCRC CAFE: School admin and project facilitator Julie presented overview of RC and its application to school transformation, NR presented overview of RC work so far as it relates to personalized learning. Slides uploaded to Shared Google Drive
4/26/2019	COACHING SESSION: Meeting with school leaders Leadership Call - Prepare for an onsite meeting for the RCRC team and the Change Team [Meeting will provide an opportunity to reflect on where the Change Team started and where they are today.] Identify possible times to meet with the entire Change Team onsite at NRHS
5/10/2019	COACHING SESSION: Meeting with school leaders Zoom meeting with Leadership Team - Prep for May 13th meeting - helping curriculum leaders plan and lead June 7th PD Session
5/13/2019	COACHING SESSION: Meeting with Change Team Onsite meeting with Instructional Leaders at NR (see 2019-05-13 NRHS Change Team Meeting Agenda)
5/29/2019	COACHING SESSION: Meeting with school leaders Zoom meeting w/NR Leadership Team to prep for June 7 PD session
6/7/2019	WORKSHOP: Spring PD Session at NRHS, Review PL and RC, Shared Goals and Shared Knowledge, RC Survey Updated faculty on RC and personalized learning activity so far, compare and contrast PL and UDL, conduct RC activities (Shared Goals and Shared Knowledge), share example student PL goals, conduct RC survey

Appendix B: Semi-Structured Interview Protocol for Site Visits

1. What are the goals of personalized learning at NRPS?
2. What types of personalized learning activities have you implemented within the school?
 - a. What aspects are working well?
 - b. What aspects have been challenging?
3. Has RC baseline data been used to inform your approach to the implementation of personalized learning activities? If so, how?
4. Thinking back over the past 3 months, what do you see as the greatest strengths of the NRPS? Any changes?
5. Thinking back over the past 3 months, what has been most challenging in the NRPS?
6. What supports does NRPS currently need to achieve goals?
7. Based on your experience and perspective, is there anything you'd like to add that you believe is being overlooked or misunderstood?
8. Reflections on the process thus far:
 - a. Optimism vs skepticism
 - b. Going well
 - c. Could be improved
 - d. Important next step to continue to make progress

Appendix C: Semi-Structured Focus Group Protocol for Site Visits

1. What are the goals of personalized learning at NRPS?
2. What types of personalized learning activities have you implemented within the school?
 - a. What aspects are working well?
 - b. What aspects have been challenging?
3. Thinking back over the past 3 months, what do you see as the greatest strengths of the NRPS? Any changes?
4. Thinking back over the past 3 months, what has been most challenging in the NRPS?
5. What supports does NRPS currently need to achieve goals?
6. Based on your experience and perspective, is there anything you'd like to add that you believe is being overlooked or misunderstood?