UP for Learning's Mindset, Metacognition, and Motivation Program: Evaluation of Year Two Implementation

August 2017

Steven Netcoh, Ph.D.
University of Vermont
Burlington, VT 05401
snetcoh@uvm.edu

Executive Summary

Introduction

Up for Learning's Mindset, Metacognition, and Motivation (M3) program is designed to build students' capacity to take ownership of their education by helping them understand the learning process and how it is constructed. During the 2016-17 school year, Bellows Free Academy (BFA) Fairfax and North Country Union High School participated in the M3 program to help students understand the relevance of mindset, metacognition, and motivation to their own learning and lives outside the classroom. This program was implemented weekly in all ninth-grade flex and support blocks at each school over the course of a five-week period at North Country and ten-week period at BFA Fairfax. Youth took the lead in carrying out the M3 program by serving as curriculum facilitators and sharing recent brain research on mindset, metacognition, and motivation through texts and video and leading activities and discussions to help students understand the relevance of concepts to their own lives.

Evaluation Objectives

This evaluation was designed to answer the following questions about the M3 program at BFA Fairfax and North Country Union High School:

1. What changes in students' understanding of concepts related to mindset, metacognition, and motivation coincided with their participation in the M3 program?
2. What are some of the perceived a) benefits and b) challenges of having youth serve as the teachers/facilitators of the M3 curriculum?
3. In what ways do the student facilitators perceive they have grown through their participation in the program?
4. What do youth facilitators and teachers perceive as areas for growth in the M3 program?

Methods

Survey data were collected to answer Evaluation Question 1. Thirty-four students at BFA Fairfax completed surveys at the beginning and end of the M3 program that aimed to assess changes in respondents' understanding of key concepts and ideas related to mindset, metacognition, and motivation. Student responses on seven items related to growth mindset, six items pertaining to metacognition, and one item related to motivation were analyzed using descriptive statistics to identify changes in their levels of understanding of these concepts from the pre-survey to the post-survey.

Focus groups were conducted to answer Evaluation Questions 2, 3, and 4. At BFA Fairfax, five youth facilitators participated in one focus group, and the two partner adults engaged in another focus group with one ninth-grade support block teacher. At North Country, five youth facilitators participated in one focus group while five ninth-grade flex block teachers engaged in another focus group with one of the M3 partner adults. This partner adult also participated in a separate focus group with the Executive Director of UP for Learning. In each focus group, youth and adults were asked about their perceptions of what worked well with the initiative, changes they would make to the program moving forward, and what advice they would give to those who occupied the same roles (e.g. youth facilitator, partner adult, flex/support block teacher) in future iterations of M3. Youth facilitators were also asked about what personal growth they experienced through their participation in M3 while teachers were asked about their

experiences having youth serve as facilitators for the curriculum. Once transcripts of these focus groups were produced, structural codes (Saldaña, 2016) were used to label segments of the data related to each evaluation question. Descriptive codes (Saldaña, 2016) were then used to further specify the concepts and ideas addressed within each structural grouping. Finally, the constant comparative method was applied to group the descriptive codes into categories according to their similarities, which serve as the basis for the evaluation's findings.

Findings

The evaluation findings are organized around the four questions that guided this study. In the following section, each evaluation question is provided with the primary themes that emerged from the data related to these questions.

Evaluation Question 1: What changes in students' understanding of concepts related to mindset, metacognition, and motivation coincided with their participation in the M3 program?

- ***Mindset*** – Survey data showed that a higher percentage of students indicated beliefs associated with growth mindset and demonstrated greater understanding of related concepts after participating in the M3 program. By the end of the program, 82% of students indicated some level of agreement with the growth mindset statement that the nature of a person's ability to learn is not fixed and that it grows with effort and support. More students also agreed that they can influence the way their brain learns on the post-survey (91%) than they did on the pre-survey (82%), with more than three-quarters of students (82%) indicating agreement or strong agreement. Students also reported less agreement with the fixed mindset belief that they have a certain amount of intelligence and can't do much to change it at the end of the program (67% disagreed or strongly disagreed) compared to the beginning (33% disagreed or strongly disagreed). These and other data suggest students had beliefs more closely aligned with growth mindset at the end of the program than they did at the outset.
- ***Metacognition*** – Survey data suggested that students demonstrated growth in their understanding of some concepts and ideas related to metacognition but not others. With regard to growth, nearly half of students offered definitions of metacognition that indicated greater understanding of the term on the post-survey compared to the pre-survey. Approximately 38% of students demonstrated greater knowledge of how the brain processes information on the post-survey than the pre-survey. Additionally, the percentage of students who showed growing or in-depth understanding of how the brain processes information increased from 3% on the pre-survey to 24% on the post-survey while the percentage of student answers that were scored as "Don't Know" decreased from 79% on the pre-survey to 50% on the post-survey. On the other hand, students indicated relatively similar levels of agreement on the pre- and post-surveys about having learning strategies to try when learning becomes difficult for them (94% vs. 88%), having a basic understanding of how their brains process information (85% vs. 85%), and whether stress can help promote learning and decision-making (64% vs. 64%). These results suggest that the outcomes related to students' understanding of metacognition and its associated concepts were mixed.
- ***Motivation*** – Most students (85%) believed they understood what motivates them and others as learners prior to participating in M3. However, a greater percentage of

students agreed or strongly agreed with that statement on the post-survey (70%) than on the pre-survey (44%), which indicated more confidence in their levels of understanding what motivates them and others as learners.

Evaluation Question 2a: What are some of the perceived benefits of having youth serve as the teachers/facilitators of the M3 curriculum?

- ***Supporting Receptivity*** – Youth facilitators and teachers believed students were more receptive to the M3 curriculum because it was delivered by their peers rather than their teachers. Student comments on the post-survey supported this belief as some suggested the curriculum was more impactful because it came from their peers rather than teachers.
- ***Making M3 Concepts Relevant*** – Youth facilitators believed they effectively drew on their shared experiences with their peers to make M3 concepts more relevant for students who participated in the program.
- ***Additional Benefits*** – Survey data also suggested that some students felt more comfortable with their peers serving as the teachers of the curriculum and believed that the youth facilitators made the content more interesting and memorable or presented the information more effectively than their teachers.

Evaluation Question 2b: What are some of the perceived challenges of having youth serve as the teachers/facilitators of the M3 curriculum?

- ***Classroom Management*** – One of the biggest challenges associated with youth facilitation of the M3 curriculum at both schools was classroom management as some students resisted being told what to do by their peers, and some youth facilitators did not display enough confidence to engage students and effectively lead classroom activities.
- ***Preparation for Facilitation*** – Because youth facilitators were students in the school and had relatively inflexible class schedules, they had limited time during the school day to prepare for their teaching of the M3 curriculum. Consequently, most facilitators prepared for their M3 sessions at the last minute and often felt they were "winging it" during their facilitations.

Evaluation Question 3: In what ways do the student facilitators perceive they have grown through their participation in the program?

- ***Development of Transferable Skills*** – After participating in the M3 program, youth facilitators felt more confident in their skills as collaborators and communicators, which are transferable skills that the Vermont Agency of Education has identified as critical for high school graduates.
- ***Deep Understanding and Application of M3 Content*** – Because they needed to study the curricular materials in-depth to teach the content to their peers, youth facilitators described developing a deep understanding of M3 content and an ability to apply the concepts and lessons to their personal lives.

- ***Interest in and Capacity for Leadership Opportunities*** – Youth facilitators at BFA Fairfax suggested their experiences with M3 fostered their capacities and identities as leaders along with their interest in pursuing future leadership opportunities.

Evaluation Question 4: What do youth facilitators and teachers perceive as areas for growth in the M3 program?

- ***Communicating Purpose and Responsibilities*** – Youth facilitators, teachers, and students were not always clear about the purpose (i.e., "the why") of the M3 program and what their involvement would entail. Some youth facilitators called for greater clarity regarding the purpose and responsibilities of the program during recruitment and at the training they attended in October.
- ***More Hands-On and Kinesthetic Activities*** – Youth facilitators overwhelmingly suggested that students were most engaged with the curriculum during activities that incorporated movement and opportunities for participants to interact and therefore recommended limiting the time spent lecturing and increasing the number of kinesthetic and hands-on activities associated with the program.
- ***Communication with Teachers*** – Focus groups revealed some uncertainty among teachers about how involved they should be during the sessions that youth facilitated. Some teachers wanted greater clarity about what was expected of them during M3 sessions and what role they should play in the classroom. This uncertainty contributed to some of the challenges youth facilitators experienced with classroom management.

Conclusion

The M3 program contributed to a variety of positive outcomes at BFA Fairfax and North Country Union High School. After engaging with the M3 curriculum, a greater percentage of students at BFA Fairfax demonstrated beliefs associated with growth mindset through the answers they provided on the post-program survey. Although few students demonstrated an in-depth understanding of concepts such as mindset, metacognition, and neuroplasticity in the definitions they offered at the end of the program, many showed greater understanding of these terms on the post-survey than they did on the pre-survey.

The positive outcomes of the M3 program extended beyond students' emerging understandings of concepts such as mindset, metacognition, and motivation. The youth who participated in M3 as facilitators perceived personal growth in their skills as collaborators and communicators and their confidence in themselves more generally. In this way, M3 served as a valuable flexible pathway for youth facilitators to develop and demonstrate their proficiency in transferable skills that the Vermont Agency of Education has determined to be critical for all high school graduates. Additionally, the findings suggest M3 represented an effective means for fostering youth leadership, particularly at BFA Fairfax. Participating in the M3 program helped develop youth facilitators' capacity for and interest in future leadership roles and allowed the entire ninth-grade class at both schools to see their peers in these new leadership positions.

There were also some perceived areas for growth in the program. Two of the identified areas for growth related in some way to communication. Youth facilitators called for clearer communication from UP for Learning during recruitment and training about the purpose of M3 and what their involvement in the program would entail. Clearer communication of the "why" of

M3 during the training could have helped youth facilitators establish the purpose of the program for students, which some focus group participants suggested was not made explicit during implementation. Teachers also called for clearer communication from youth facilitators and M3 partner adults about the expectations for their roles during M3 sessions. Finally, youth facilitators suggested the most effective and engaging activities for students were those that involved movement and interaction and therefore recommended more hands-on and kinesthetic activities be incorporated into the M3 curriculum in the future.

Introduction

As secondary schools in Vermont transition toward personalized learning, students are being asked to take increasing responsibility for their education. Act 77, the law mandating personalization in Vermont middle and high schools, intends to give students more control over their learning by allowing them to pursue flexible pathways through the education system that are best suited to their individual interests, needs, and aspirations as learners. For students to take full advantage of these flexible pathways and personalized learning opportunities, they must understand their own strengths, interests, and needs as learners, become skilled goal setters, and take increased control over the direction and management of their own learning. These types of skills and responsibilities are new for many students, however, because teachers have typically controlled most aspects of the learning process in public school classrooms. With Act 77 encouraging students to take a lead role in shaping their own learning, schools will need to develop students' capacity to take on the new responsibilities associated with this ownership and control.

UP for Learning's Mindset, Metacognition, and Motivation (M3) program is intended to prepare students to personalize their learning by equipping them with the knowledge and skills to take control over their own education. As the initiative's name suggests, M3 aims to introduce participants to the concepts of mindset (i.e., expectations about achievement), metacognition (i.e., "thinking about thinking" or "learning about learning"), and motivation (particularly as it relates to rigor, relevance, relationships, and shared responsibility) and help them understand their relevance to their lives both in and out of school. Up for Learning believes that by helping students understand the learning process and how it is constructed, they will be better prepared to take control over their own learning and become active participants in their education. The organization also hopes that reflection on mindset, metacognition, and motivation, will help students and teachers develop a common language that they can use to become full partners in the learning process. The ultimate goal of the M3 program is to build students' capacity to take ownership of their learning.

In partnership with UP for Learning, youth-adult teams at Bellows Free Academy (BFA) Fairfax and North Country Union High School drew on the successes and lessons of previous iterations of M3 to implement their own versions of the program during the 2016-17 school year. As with past versions of the initiative, BFA Fairfax and North Country students took on integral roles in the implementation of M3 by tuning the curriculum to suit the needs of their school context and facilitating activities during flex/support block times to help ninth-grade students better understand the relevance of mindset, metacognition, and motivation to their own learning. After attending a one-day training where they learned about M3's key concepts and engaged with the curriculum activities, youth facilitators implemented the M3 curriculum in all ninth-grade flex/support blocks at BFA Fairfax and North Country. During these sessions, youth facilitators shared recent brain research on mindset, metacognition, and motivation through texts and videos, facilitated discussions on the relevance of this research to their own lives, and led activities to help students experience some of the curricular concepts in action. Students at BFA Fairfax and North Country engaged with the M3 curriculum for 10 weeks and 5 weeks, respectively. In addition to these classroom-based activities, youth facilitators hung posters and flyers around the school that reinforced some of the themes and ideas related to mindset, metacognition, and motivation covered in the curriculum. Collectively, these activities sought to raise student awareness about key facets of their learning and equip them with the skills to take ownership of their education.

Evaluation Objectives

The purpose of this evaluation was to address the following questions related to the M3 initiative at BFA Fairfax and North Country Union High School:

1. What changes in students' understanding of concepts related to mindset, metacognition, and motivation coincided with their participation in the M3 program?
2. What are some of the perceived a) benefits and b) challenges of having youth serve as the teachers/facilitators of the M3 curriculum?
3. In what ways do the youth facilitators perceive they have grown through their participation in the program?
4. What do youth facilitators and teachers perceive as areas for growth in the M3 program?

Methodology

Surveys

To answer Evaluation Question 1, UP for Learning developed a survey that students completed at the beginning and end of the M3 program to assess changes in their understanding of key concepts and ideas related to mindset, metacognition, and motivation. The pre-survey consisted of 17 items while the post-survey had 24 items. The additional seven items on the post-survey were focused on obtaining students' feedback on various aspects of the program such as the impact of having peers deliver the curriculum, the most memorable topics covered during M3 sessions, what changes they would suggest to the curriculum in the future, and how frequently their teachers had integrated concepts from M3 into their classes. Student responses to these seven items were used to inform the findings for Evaluation Question 2.

Of the 17 items that were on both the pre- and post-surveys, one (Item 11) was written differently on the pre-survey than it was on the post-survey. Therefore, student answers on the pre-survey could not be adequately compared to their responses on the post-survey. Consequently, Item 11 was not included in the analysis of the survey results. A scoring guide was also not provided for Item 16, and it too was not included in the analysis of survey results. Of the 15 remaining items that were the same on the pre- and post-surveys, seven related to growth mindset, six related to metacognition, one related to motivation, and the final item asked students what they were curious to know about their learning brains. Some items were based on a Likert scale and asked students to indicate their level of agreement or disagreement with statements that pertained to key concepts and ideas addressed in the M3 curriculum (e.g., "I have a certain amount of intelligence and I can't do much to change it"). Other items were open-ended and asked students to provide written responses to statements and questions related to key M3 concepts and ideas (e.g., "What does the word 'metacognition' mean?" and "List up to 3 strategies you can try when learning gets hard for you"). UP for Learning provided the evaluator scoring guides to assign ordinal values to students' open-ended answers. The evaluator scored each open-ended response with an ordinal value to facilitate data analysis.

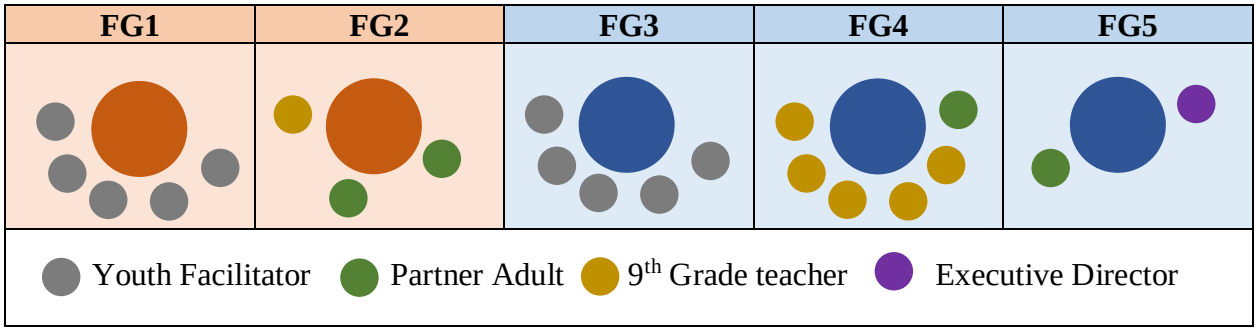
Students at North Country completed the pre-survey but did not take the post-survey. Therefore, the findings from the survey data that are presented in the next section are based solely on the data collected from BFA Fairfax. In total, 46 students at BFA Fairfax completed the pre-survey while 37 students completed the post-survey. Of these students, 34 took both the pre- and post-surveys. Therefore, the final sample consisted of data collected from these 34 students who completed both the pre- and post-surveys.

Focus Groups

To answer Evaluation Questions 2, 3, and 4, focus groups were conducted with M3 youth facilitators and ninth-grade flex/support block teachers at each school. The school faculty/staff members who partnered with the youth facilitators to plan program implementation also participated in the focus group with the ninth-grade flex/support block teachers. The composition of each focus group that was conducted is provided in Figure 1 below. The cells with the orange backgrounds indicate focus groups conducted at BFA Fairfax, and the cells with the blue backgrounds represent focus groups conducted at North Country.

During focus groups, both youth and adults were asked to share their perspectives about what worked well with M3 and what changes they would make to the program moving forward. Youth facilitators at both schools were additionally asked about what personal growth they believed they experienced through their participation in M3 and what advice they had for future youth facilitators of the program. In addition to questions about successes and areas for growth in the program, teachers were asked about their experiences with having youth serve as facilitators of the curriculum and what advice they would give to future teachers/partner adults involved in M3.

Figure 1: *Focus Group Composition*



Data Analysis

The survey data were analyzed by calculating descriptive statistics that provided an overview of student responses on the pre- and post-surveys. Specifically, the percentage of students who selected each item response or provided an answer that was assigned a specific ordinal value based on the scoring guide was calculated for each item on the pre- and post-surveys. Each student's response on the pre-survey was also compared to their response on the post-survey to identify if there was any growth or regression in their understanding of key concepts addressed in the M3 curriculum. Percentages were calculated for students who demonstrated growth, regression, and no change in understanding of these key concepts for each item. These analyses aimed to provide insight into how students' understanding of key concepts related to mindset, metacognition, and motivation prior to participating in M3 compared to their understanding of these ideas after engaging with the program curriculum.

To facilitate analysis of the qualitative data, all focus groups were transcribed verbatim. Structural codes (Saldaña, 2016) were then used to label segments of the transcripts that related to each evaluation question. For example, the code AREA FOR GROWTH was used to mark sections of the data in which participants discussed aspects of the program they felt could be improved upon moving forward (i.e., pertaining to Evaluation Question 4). Data assigned the same structural codes were then grouped together, and descriptive codes (Saldaña, 2016) were

used to further specify the concepts and ideas addressed within each structural grouping. The constant comparative method was then used to group these descriptive codes into categories according to their similarities, and these categories serve as the basis for the findings described in the following section.

Findings

The evaluation findings are organized around the four questions that guided this study. The first section addresses changes in students' understandings and beliefs related to mindset, metacognition, and motivation from the beginning to the end of the program. The second section explores the perceived benefits and challenges of having youth serve as teachers and facilitators of the M3 curriculum. The third section examines facilitators' perceptions of how they grew through their participation in the program. Finally, the fourth section focuses on youth facilitators and teachers' perceptions of areas for growth in the program.

Evaluation Question 1: Changes in Students' Understanding of Mindset, Metacognition, and Motivation

The findings presented in this section are based on the survey data collected prior to and after BFA Fairfax students engaged with the M3 curriculum. Each survey item is presented and followed by a table documenting pre- and post-survey results along with a descriptive analysis of the data. The findings are organized around the program's central concepts of mindset, metacognition, and motivation so that items addressing aspects of the same construct are presented together. Discussions of the overall findings for mindset and metacognition are also provided at the end of their respective sub-sections

Mindset

Item 1: Which of the following statements best reflects your ideas about the nature of a person's ability to learn?

Response	Pre	Post
Not fixed, grows with effort and support	53%	85%
Largely fixed, can be somewhat influence with effort and support	44%	9%
Largely fixed at birth	3%	6%

The first item of the survey asked students to select a statement that best reflected their ideas about the nature of a person's ability to learn. On the pre-survey, a slight majority (53%) of students selected the response associated with growth mindset while the remainder of respondents chose a statement associated with a fixed mindset. On the post-survey, a wide majority of students (85%) selected the response associated with growth mindset while only 15%

chose a statement associated with a fixed mindset. Three out of four students (75%) who selected a "fixed mindset" response on the pre-survey chose the "growth mindset" response on the post-survey. These results suggest that a greater number of students believed that the nature of a person's ability to learn is not fixed and that it grows with effort and support after participating in the M3 program.

Item 2: I have a certain amount of intelligence and I can't do much to change it

Response	Pre-Survey	Post-Survey
Strongly Disagree	15%	35%
Disagree	18%	32%
Somewhat Disagree	26%	12%
Somewhat Agree	26%	6%
Agree	15%	15%
Strongly Agree	0%	3%

The second item on the survey related to students' beliefs about their own intelligence. On the pre-survey, 41% of students indicated some level of agreement with the fixed mindset statement that they have a certain amount of intelligence and can't do much to change it. Fifty-nine percent of students expressed some level of disagreement with this statement. On the post-survey, only 1 in 5 students reported some level of agreement with the fixed mindset statement while 79% of students disagreed with the statement. Half of the respondents reported less agreement with the statement after participating in M3 while 12% reported more agreement and 38% showed no change in their level of agreement. Collectively, these results suggest a greater number of students believed in the malleable nature of intelligence after participating in M3.

Item 3: I can influence the way my brain learns

Response	Pre	Post
Strongly Disagree	3%	3%
Disagree	0%	0%
Somewhat Disagree	15%	6%
Somewhat Agree	32%	9%
Agree	32%	50%
Strongly Agree	18%	32%

The third question of the survey similarly related to students' beliefs about the malleability of the brain and their learning. On the pre-survey, 82% of students indicated some level of agreement with the growth mindset statement that they can influence the way their brain learns. Eighteen percent of students expressed some level of disagreement with this statement. On the post-survey, 91% of students reported some level of agreement with this growth mindset statement while only 9% indicated some level of disagreement. Fifty-three percent of

respondents reported stronger agreement with the statement after participating in M3 while 12% reported less agreement and 35% showed no change in their level of agreement. As is evident in the table, a much greater percentage of students agreed or strongly agreed with the growth mindset statement on the post-survey (82%) than the pre-survey (50%). These results suggest that a large majority of students believed they could influence the way their brain learns before participating in M3 but that their convictions grew stronger after engaging with the program's curriculum.

Item 8: Think of a time that it was really hard to learn something. What did you say to yourself when learning got hard?

Response	Pre	Post
N/A	41%	15%
Quit	0%	24%
Doubt	6%	0%
Optimism	38%	32%
Confidence	15%	29%

The eighth item on the survey was an open-ended question about what students said to themselves when learning got hard. Student answers were scored by the evaluator as indicating Quit, Doubt, Optimism, or Confidence. On the pre-survey, just over half (53%) of students provided a response that indicated positive self-talk. On the post-survey, 61% of students offered an answer that demonstrated positive self-talk. Approximately 18% of students provided an answer that indicated more positive self-talk after participating in M3 while 15% reported more negative self-talk and 20% showed no change in self-talk. A rather unexpected finding was that 24% of students offered a response that signaled Quit on the post-survey after 0% provided such a response on the pre-survey. A potential explanation for this finding is that students who were uninterested in taking the post-survey or had negative perceptions of the program generally provided answers they knew ran counter to the lessons of the M3.

Item 9: Think of a time when you failed at a learning task. What did you say to yourself in this instance?

Response	Pre	Post
N/A	21%	20%
Defeatist	0%	0%
Self-Doubt	6%	9%
Discomfort	32%	6%
Try Harder	9%	15%
Optimism	23%	32%
Confidence	9%	18%

The ninth item on the survey was an open-ended question about what students said to themselves when they failed a learning task. Student answers were scored by the evaluator as indicating Defeatist, Self-Doubt, Discomfort (with failure), Try Harder, Optimism, or Confidence. The data indicate that a higher percentage of students provided answers that signaled Optimism or Confidence (i.e., positive self-talk) on the post-survey (50%) than the pre-survey (32%), and a substantially lower percentage of students offered answers that signaled Discomfort on the post-survey (6%) than the pre-survey (32%). Approximately 29% of students provided an answer that indicated more positive self-talk after participating in M3 while 9% reported more negative self-talk and 26% showed no change in self-talk. Collectively, these data suggest a greater percentage of students reported more positive self-talk in response to failure after participating in the M3 program.

Item 10: A "growth mindset" is…

Response	Pre	Post
Don't Know	32%	0%
Superficial	38%	35%
Limited	21%	41%
General	9%	24%
In-Depth	0%	0%

The tenth item on the survey was an open-ended question asking students to describe what a "growth mindset" is. Student answers were scored by the evaluator as indicating Don't Know, Superficial, Limited, General, or In-Depth. Each of these scores related to students' understanding of what a growth mindset is. Approximately 63% of students provided a response on the post-survey that demonstrated greater understanding of growth mindset than their response on the pre-survey while approximately 12% of students provided post-survey responses that indicated less understanding of growth mindset than their response on the pre-survey. Approximately 26% of students provided answers that scored the same on the pre- and post-surveys. Notably, no student responses were scored as "Don't Know" on the post-survey. These data suggest students had a greater concept of "growth mindset" after their participation in the M3 program although no students demonstrated an in-depth understanding of the term in the responses they provided on the surveys. The results indicate that while students will likely need further engagement with the concept to develop a deeper understanding of it, the curriculum helped move most students toward that deeper understanding.

Item 13: What does "neuroplasticity" mean?

Response	Pre	Post
Don't Know	85%	47%
Bare	9%	3%
Limited	6%	44%
General	0%	6%

In-Depth	0%	0%

The thirteenth item on the survey was an open-ended question asking students to explain what "neuroplasticity" means. Student answers were scored by the evaluator as indicating Don't Know, Bare, Limited, General, or In-Depth. Each of these scores related to students' understanding of what neuroplasticity means. Nearly half of students provided a response on the post-survey that demonstrated greater understanding of neuroplasticity than their response on the pre-survey while approximately 9% of students provided post-survey responses that indicated less understanding of growth mindset than their response on the pre-survey. Approximately 41% of students provided answers that scored the same on the pre- and post-surveys. These data suggest students were better able to explain what "neuroplasticity" means after their participation in the M3 program although no students demonstrated an in-depth understanding of the concept in the responses they provided on the surveys. While students will likely need further engagement with the concept to develop a deeper understanding of it, the curriculum helped move many students in that direction as half of respondents in the sample provided a definition that demonstrated greater understanding of neuroplasticity on the post-survey than they did on the pre-survey.

Discussion of mindset findings. Overall, these findings suggest the M3 curriculum had a positive impact on students' understanding of mindset. By the end of the program, 82% of students indicated that the nature of a person's ability to learn is not fixed and that it grows with effort and support. This result contrasted the 56% of students who indicated this response on the pre-survey. Eighty-two percent of students also agreed or strongly agreed that they can influence the way their brain learns by the end of the program whereas only 50% of students indicated these responses on the pre-survey. Students also demonstrated stronger disagreement with fixed mindset statements after participating in M3 as two-thirds of students disagreed or strongly disagreed that they have a certain amount of intelligence and can't do much to change it on the post-survey whereas only one-third disagreed or strongly disagreed on the pre-survey. Although students still had relatively limited definitions of growth mindset by the end of the program (at least as indicated by their responses), they demonstrated growth in their understanding of the term from the pre-survey to the post-survey as 65% of students demonstrated limited or general understanding on the post-survey while only 30% of responses were scored as Limited or General on the pre-survey. Corresponding with these developments of growth mindsets, students also reported more positive self-talk after engaging with the M3 program as a greater percentage of students indicated optimism or confidence in their responses to failure on the post-survey (50%) than the pre-survey (32%) and less discomfort with failure on the post-survey (6%) compared to the pre-survey (32%). There was not as much positive growth, however, on the item assessing what students said to themselves when it was difficult to learn something as there was not much variance in the pre- and post-survey results. Collectively, these findings suggest students showed considerable growth toward understanding and adopting growth mindsets after their participation in the M3 program.

Metacognition

Item 4: I have strategies to try when learning gets hard for me

Response	Pre	Post
Strongly Disagree	3%	6%
Disagree	0%	3%
Somewhat Disagree	3%	3%
Somewhat Agree	35%	20%
Agree	44%	47%
Strongly Agree	15%	21%

The fourth question of the survey related to students' knowledge of strategies they could use when they encounter difficulties with their learning. On the pre-survey, 94% of students indicated some level of agreement with the statement that they have strategies to try when learning gets hard for them. On the post-survey, 88% of students reported some level of agreement with the statement about learning strategies while 12% indicated some level of disagreement. A quarter of respondents reported stronger agreement with the statement after participating in M3 while 18% reported less agreement and over half showed no change in their level of agreement. These results suggest that most students believed they had strategies to try when learning got hard prior to their participation in M3. The slight decrease in the percentage of students who agreed with the statement on the post-survey may have been a result of students developing a better understanding of their own learning and recognizing they lacked effective strategies to support their learning when things became difficult.

Item 5: I have a basic understanding of how my brain processes information

Response	Pre	Post
Strongly Disagree	6%	6%
Disagree	6%	3%
Somewhat Disagree	3%	6%
Somewhat Agree	23%	23%
Agree	53%	47%
Strongly Agree	9%	15%

The fifth item of the survey related to students' understanding of how the brain processes information. On the pre-survey, 85% of students indicated some level of agreement with the statement that they have a basic understanding of how their brain processes information. Fifteen percent of students expressed some level of disagreement with this statement. These percentages were the same on the post-survey. Over a third of respondents reported stronger agreement with the statement after participating in M3 while 24% reported less agreement and 41% showed no change in their level of agreement. These data suggest most students believed they had a basic understanding of how their brain processes information prior to participating in M3 and that there was little overall change over the course of their participation in the program.

Item 6: Stress can help promote learning and decision making

Response	Pre	Post
Strongly Disagree	12%	18%
Disagree	12%	3%
Somewhat Disagree	12%	15%
Somewhat Agree	17%	29%
Agree	35%	23%
Strongly Agree	12%	12%

The sixth item on the survey related to students' beliefs about whether stress can help promote learning and decision making. On the pre-survey, 64% of students indicated some level of agreement with the statement that stress can help promote learning and decision making. Similarly, on the post-survey, 64% of students reported some level of agreement with the idea that stress can promote learning, although these were not these same students. Approximately 26% of respondents reported stronger agreement with the statement after participating in M3, while 38% reported less agreement and 35% showed no change in their level of agreement. These data suggest there was relatively little change in students' beliefs about whether stress can help promote learning and decision making from the beginning to the end of the M3 program.

Item 12: What does the word "metacognition" mean?

Response	Pre	Post
Don't Know	79%	50%
Bare	15%	15%
Limited	6%	26%
General	0%	9%
In-Depth	0%	0%

Item 12 was an open-ended question asking students to explain what "metacognition" means. Similar to other open-ended questions, student answers were coded as Don't Know, Bare, Limited, General, or In-Depth. Nearly half of the students (47%) provided a response on the post-survey that demonstrated greater understanding of metacognition than on the pre-survey. Only 9% of students indicated less understanding on the post-survey, and 44% of students provided answers that scored the same. This data suggests that students were better able to explain what "metacognition" means after their participation in the M3 program although no students demonstrated an in-depth understanding of the concept. While students will likely need further engagement with the concept to develop a deeper understanding of it, the curriculum helped move many students in that direction.

Item 14: List up to 3 things you know about how the brain processes information.

Response	Pre	Post

Don’t Know	79%	50%
Limited	18%	26%
Growing	3%	21%
In-Depth	0%	3%

The fourteenth item on the survey was an open-ended question asking students to list up to three things they know about how the brain processes information. Student answers were scored as Don't Know, Limited, Growing, or In-Depth. Approximately 38% of students demonstrated greater knowledge of how the brain processes information on the post-survey than on the pre-survey while only 3% demonstrated decreased knowledge. Approximately 59% of students provided answers that scored the same on the pre- and post-surveys. These data suggest students were able to demonstrate more knowledge of how the brain processes information after their participation in the M3 program.

Item 15: What are some study strategies you use (or could use) to help you learn?

Response	**Pre**	**Post**
N/A	32%	53%
Don’t Know	3%	0%
Limited	62%	47%
Growing	3%	0%
In-Depth	0%	0%

Item 15 was an open-ended question asking students to describe some study strategies they use or could use to help them learn. Answers were scored as Don't Know, Limited, Growing, or In-Depth. On both the pre-survey and post-survey, there were numerous student responses that did not fall into the categories provided on the scoring guide. Only one student provided a response on the post-survey that demonstrated greater knowledge of study strategies they use or could use to support their learning while 32% of students’ responses scored the same on the pre- and post-surveys. The remainder of responses could not be classified. These data suggest students did not grow in their knowledge of study strategies they could use to help them learn over the time in which they participated in the M3 program.

Discussion of metacognition findings. Overall, these findings suggest students demonstrated limited change in their understanding of metacognition from the beginning to the end of the program. Although students showed some growth in their ability to define to metacognition from the pre-survey to the post-survey, half of students suggested they did not know what the term means at the end of the program while 31% offered definitions of the word that were scored as “Bare” or “Limited.” The data also indicated little change in student responses on the pre- and post-surveys for a number of items. Students indicated relatively similar levels of agreement on the pre- and post-surveys about having learning strategies to try when learning becomes difficult for them (94% vs. 88%), having a basic understanding of how their brains process information (85% vs. 85%), and whether stress can help promote learning

and decision-making (64% vs. 64%). There was also relatively little change in the strength of students' agreement for each of these items. The results for Item 15 were difficult to interpret because an overwhelming majority (94%) of student responses either could not be scored based on the scoring guide or were classified as "Limited" on both the pre- and post-surveys. The one item on which some growth was evident was Item 14 as the percentage of students who demonstrated growing or in-depth understanding of how the brain processes information increased from 3% to 24% from the pre- to post-survey, and the percentage of answers classified as "Don't Know" decreased from 79% to 50%. Collectively, these data indicate that students demonstrated limited growth toward understanding metacognition and its associated concepts after participating in the M3 program.

Motivation

Item 7: I understand what motivates me (and others) as a learner

Response	Pre	Post
Strongly Disagree	0%	9%
Disagree	6%	0%
Somewhat Disagree	9%	6%
Somewhat Agree	41%	15%
Agree	32%	53%
Strongly Agree	12%	17%

Item 7 was the sole item on the survey related to students' understanding of what motivates them and others as learners. On the pre-survey, 85% of students indicated some level of agreement with the statement that they understand what motivates them (and others) as a learner. Similarly, on the post-survey, 85% of students reported some level of agreement with the statement although at different levels. Approximately 38% of respondents reported stronger agreement with the statement after participating in M3 while 24% reported less agreement and 38% showed no change in their level of agreement. These results suggest that most students believed they understood what motivates them and others as learners prior to participating in M3. However, a greater percentage of students agreed or strongly agreed with the statement on the post-survey (70%) than on the pre-survey (44%), which could indicate more confidence in their levels of understanding what motivates them and others as learners.

Evaluation Question 2a: Benefits of Youth Facilitation

Youth facilitators and teachers perceived two primary benefits associated with having youth serve as messengers of the M3 curriculum. These benefits were: 1) supporting students' receptivity to the curriculum (i.e., students were more open to the curriculum being delivered by their peers than teachers) and 2) youths' ability to make the curriculum more relevant to their peers. These benefits are described in greater detail in this section.

Supporting receptivity. Youth facilitators and adults from both schools believed that students were more receptive to the curriculum because it was presented by their peers rather than adults. For example, one youth facilitator from BFA Fairfax asserted, "I really did enjoy

teaching my kids 'cuz I feel like they took away more from it than if we were to have a teacher teach the same curriculum." A teacher from BFA Fairfax echoed this statement when he said, "And even the kids said when we were chatting about it the other day with another group that came in, it wouldn't have been as powerful as it had been coming from the students. The message was better." Some student responses on the post-survey also suggested youth facilitators supported students' receptivity to the curriculum as they offered comments such as, "It's more interesting to listen to another student teach you things than a teacher that's paid to do it" and "Having my peers share this information made it a little more memorable because it was people I knew who were interested in the topic willing to speak to us." Collectively, these comments suggest that youth facilitators served as different kinds of curriculum messengers than those to which students are accustomed in school. Rather than M3 being another initiative delivered to students by teachers, youth served as the primary sponsors and advocates for its content and associated activities. Their participation in the development and implementation of the initiative demonstrated that there was already a level of interest in the program among some students in the school. Therefore, their role as facilitators of the curriculum helped support students' receptivity to the program.

Making M3 concepts relevant. Youth facilitators also suggested they were able to make M3 concepts more relevant for students because of their proximity in age and shared experiences. As students themselves, facilitators used their intimate knowledge of youths' experiences in their schools to make connections between M3 concepts and topics or ideas that they knew would be salient for their peers. For example, some youth facilitators described how they made the connection between M3 concepts and proficiency-based assessment, knowing it was a pertinent topic for the freshman classes at their schools. Other facilitators talked about how they related the curriculum to everyday experiences they shared with their peers. One youth facilitator from BFA Fairfax asserted:

> I think toward the end they were really taking it in more because we were able to relate it to our own experiences…I've gone to school with most of these kids since I was in kindergarten. So I can be like, 'Oh yea, I did something at practice last night' or 'Do you remember a couple years ago when we did this in class?' So it was just something that like we had more experience with them…I think that was really helpful for connecting it because I feel like if I know I'm making the curriculum better when you connect it to something that I experienced or something that's going on in our life as kids.

As this comment indicates, youth facilitators drew on their own experiences as students to identify ways to make M3 concepts more relevant for their peers. As students themselves, they understood the value of connecting curricular content to students' personal lives because they believed they learned more effectively when teachers related content to their personal experiences and aspirations. Because they had such extensive shared experience with their peers, youth facilitators felt they could easily and effectively establish the relevance of the M3 concepts for students who participated in the program.

Additional benefits. Student responses on the post-survey revealed a few other benefits associated with youth facilitation of the M3 curriculum. Just over half (51%) of the responses on the post-survey item that asked students to reflect on the importance of having peers deliver the M3 information described benefits of having youth serve as the facilitators of the curriculum. Four students suggested they were more relaxed and comfortable in the classroom having their peers teach the information. For example, one student said, "I was more comfortable answering questions if my classmates were asking them." Six students offered comments suggesting youth

facilitators either made the content more interesting or presented the information more effectively than teachers. One of these students said, "The peers can deliver the information in a way we understand" while another remarked, "People our own age and they teach it better." A few students also suggested that having youth facilitators as the primary messengers of the curriculum made it more memorable and impactful because it was delivered by their peers. These survey results offer further insight into some of the benefits of having youth serve as facilitators of the M3 curriculum.

Evaluation Question 2b: Challenges of Youth Facilitation

Although there were benefits associated with youth facilitation of the M3 curriculum, evaluation participants acknowledged some challenges of having youths teach their peers. The main challenges these participants perceived were 1) classroom management and 2) preparation for curriculum facilitation. These challenges are explored further in this section.

Classroom management. One of the biggest challenges associated with youth facilitation of the M3 curriculum at both schools was classroom management. Youth facilitators at BFA Fairfax and North Country struggled to create and maintain classroom environments that were optimally conducive to learning. According to some youth facilitators, their status as peers in relation to students undermined some of the authority upon which teachers rely at times to create the necessary conditions for learning. One student from BFA Fairfax asserted, "I think one challenge that we had with them, if we said, 'Oh you need to stop talking' or 'Can you stop talking please,' they were like, 'Oh you're our peers, like I don't really have to listen to you,' so I think that was one challenge." This feeling that students resisted being told what to do by their peers was evident in many comments offered by youth facilitators and teachers during focus group conversations. It was also evident in some of the student responses on the post-survey. In response to the question on the post-survey about the importance of having peers deliver the curriculum, for example, one student asserted, "I think that it was harder having kids our age teach because a lot of kids don't listen to others." In this way, classroom management challenges associated with youth facilitation was evident in the data collected from all stakeholder groups.

Teachers also suggested that some youth facilitators demonstrated lower levels of confidence in their teaching and enthusiasm for the curriculum, which made it difficult for them to establish effective classroom routines and deeply engage their peers in their learning. One teacher at North Country explained:

> I wish we could teach them how to have confidence in front of their peers because…[some] didn't want to raise their volume high enough to get over the chatter. They didn't want to have to be like 'Okay, time to come back together and great side conversations but now let's move on to our next activity.' They didn't want to command the classroom, and that's a hard skillset to identify in kids when you're asking them to be facilitators.

According to this teacher, some of the challenges that youth facilitators experienced with classroom management stemmed from a lack of confidence in their new roles as classroom leaders. Capturing and maintaining students' attention to engage them with the curriculum required a level of confidence that some youth facilitators did not display as they may have been uncomfortable in their new roles as authority figures. Teachers also remarked that some youth facilitators did not display a level of enthusiasm necessary for engaging their peers in their learning and suggested that some openly communicated their frustration about having to teach

the curriculum to their classes. Collectively, these lower levels of confidence and enthusiasm contributed to challenges engaging students and effectively leading classroom activities.

Preparation for facilitation. Another challenge associated with youth facilitation of the curriculum that was particularly evident at North Country was preparation. Because youth facilitators were students in the school and had relatively inflexible class schedules, they had limited time during the school day to prepare for their teaching of the M3 curriculum. Consequently, most facilitators prepared for their M3 sessions at the last minute and often felt they were "winging it" during their facilitations. As one student from North Country explained:

> I think we should have at least three or four periods during the month that we practice an event because me and Jennifer [pseudonym], we got the papers 10 minutes before we actually had to go out there and present it, so we got there, and we were pretty much just winging everything we were saying and trying to get every lesson down exactly what it said on the papers, and it's sorta difficult to us.

One of the M3 partner adults at North Country similarly addressed student preparation and its relation to scheduling when she said:

> I would want to find a way, and I don't know how to do this, but kind of like have a block of time before each session for them to just do some dry runs of the session. We just didn't have the time for that this year, and so I would like to find a way to do that if at all possible, but it's like I'm constantly pulling them out of class and I'm frequently pulling them out of the same class which perturbs the teachers so I don't know, that's a logistical challenge.

Given the significant demands on students' time both during and after the school day, it was difficult for youth facilitators to fully prepare for their implementation of each M3 session. Unlike teachers, they did not have any established time during the school day to plan and practice their facilitations or coordinate their efforts with their M3 teams. In this way, asking facilitators to serve in a dual role as students and teachers presented challenges with regard to preparation for curriculum implementation.

Evaluation Question 3: Facilitator Perceptions of Personal Growth

Youth facilitators reported experiencing various types of growth through their participation in the M3 program. The primary areas of growth that emerged from the focus groups were: 1) development of transferable skills, 2) deep learning and application of the M3 content, and 3) interest in future leadership opportunities. This section elaborates on these areas of growth that youth facilitators experienced through their participation in the M3 program.

Development of transferable skills. Youth facilitators perceived personal development in some of the transferable skills (e.g., collaboration and communication) that the Vermont Agency of Education has identified as critical for high school graduates. Serving as a facilitator for M3 required youths to work with their school-based teams and co-facilitators to plan and carry out sessions for their peers. Therefore, some youths believed their participation in the program helped them develop their skills as collaborators. As one student from BFA Fairfax asserted, "And also has our teamwork skills. Being able – we all had to work together on this, so we all had to put effort into it, and everyone took on the big responsibility, and it worked out for everyone." Youth facilitators also reported growth in their skills as communicators, particularly as it related to public speaking and formal presentations, based on their participation in M3. In addition to gaining comfort speaking in front of larger groups, youth facilitators believed they learned how to more effectively present and communicate information to their peers in formal

settings. As a student from North Country explained, "So like I learned to be like a better presenter through this because with a bunch of my classes, I have to make slideshows for different projects and present them to the class, so doing this made it easier for me to do other presentations to the other classes." Based on these and similar comments, youths felt their experience facilitating the M3 curriculum not only helped them become better presenters but also boosted their confidence in their communication skills more generally. In these ways, participation in the M3 program as facilitators supported youths' development of skills that will take on increasing importance in Vermont secondary schools in the coming years.

Deep understanding and application of M3 content. Because they needed to study the curricular materials in-depth to teach the content to their peers, youth facilitators also described developing a deep understanding of the M3 content and an ability to apply the concepts and lessons to their personal lives. Numerous youth facilitators described personally benefitting from their new understandings of the M3 concepts. For example, one student from BFA Fairfax explained, "I know like last fall I would get really mad at myself, and when we were teaching M3 sessions, I know like once I – if I got mad at myself, I'd be like oh that's not good. Like self-talk or anything. Positive attitude. And then I'd go back and fix what I messed up on and I got better at it." Like this student, many other facilitators suggested they adopted growth mindsets and more positive forms of self-talk after participating in the M3 program. Other students suggested their participation in M3 helped them better cope with the stress they experienced in their personal lives, particularly as it related to school. One student from North Country even described how his new understanding of how the brain works would enable him to effectively support his peers when they showed signs of stress in school. He said, "I mean, it helped me with like telling people about how to manage their stress…It was great to note the knowledge of how helping people – how to help people do their stress. Like that figure thing where you draw your entire hand out with your finger, and you take a breath in and out. It helps definitely." In these ways, youth facilitators were able to apply their new understandings of the M3 content to their lives in ways that supported their personal growth and well-being, and, in some cases, the growth and well-being of their peers.

Interest in and capacity for future leadership opportunities. Most youth facilitators at BFA Fairfax also suggested their experiences with M3 fostered their interest in pursuing future leadership opportunities. Although some youths suggested they would not seek out the same kind of leadership opportunity offered by M3, the experience of serving as a facilitator cultivated their interest in pursuing various kinds of leadership roles in the future. As one student from BFA Fairfax explained:

> I know that when Ms. Jones [pseudonym] presented the leadership opportunity next year, the four girls were like, 'Oh yea, let's do this,' and the boys were like, 'Yea, maybe not,' but they're still like, 'Oh yea, I want to do leadership, just not this kind.' So I feel like M3 is good as a facilitator for you to figure out do I want to continue the program or do I want to seek out other leadership opportunities? But I think the six of us still have found that leadership is a good role for us.

As this individual's final comment indicates, M3 allowed youth facilitators to test the waters of leadership and begin developing identities as leaders in their school and beyond. Teachers at BFA Fairfax echoed these comments as they suggested M3 was an effective developer of these youths' leadership interests and capacities. One teacher asserted, "I think this program has been much more successful at creating a set of student leaders…than it has been at delivering the M3 concept to all of our freshmen…I look at it as a really great program for the set of students who

were delivering them. So we have six students, possibly even seven depending on how you look at it, who really grew over the 10 to 12 weeks that we were involved in it." Based on these comments, both youth and adults recognized M3 as a useful catalyst for generating student interest in and capacity for leadership.

Evaluation Question 4: Perceived Areas for Growth in the Program

A few areas for growth in the program emerged from focus groups with youth facilitators and teachers. The primary areas identified for growth were: 1) more clearly communicating the purpose and responsibilities of participating in M3, 2) incorporating more hands-on and kinesthetic activities into the curriculum, and 3) fostering greater communication with teachers about their roles in the program. This section explores each of these areas for growth in greater detail.

Communicating purpose and responsibilities. A common theme that emerged from focus groups was that youth facilitators, teachers, and students were not always clear about the purpose (i.e., "the why") of the M3 program and what their involvement would entail. For some youth facilitators, there was a lack of clarity about what they were being asked to do with M3 from the time they were recruited for the program. Although students were provided information about M3 via a flyer at the beginning of the year, some youth facilitators suggested they had "no idea what they were getting into" and were "jumping in blind" when they agreed to be involved in the program. Teachers agreed that students did not fully understand what they were being asked to do from the start, and one recommended that during recruitment, schools should "Take the time, even together, and do that deep read of this and talk about, what does this mean? It's not just going to these trainings. It's following it through with the weekly thing and then looking at that commitment checklist that you sign off on."

Some youth facilitators also called for greater clarity regarding the purpose and responsibilities of the M3 program at the training they attended in October. One youth facilitator suggested it was not clear to him that he would eventually be responsible for leading and facilitating the activities in which he participated at the October training. Another youth facilitator asked for the purpose of M3 to be made clearer at the training when he said, "Another thing I would like you to include is when you bring us to Montpelier for your training, could you give us like a more clear definition on the why I'm doing this because when I was sitting there, I got time, and I got the material. I got it. I knew what I was doing, but I don't know why I'm doing it. Like why am I doing this?" Although the purpose and responsibilities of M3 were embedded within the recruitment flyer and training, these ideas did not transfer for some of the youth facilitators.

Because some of the youth facilitators were not entirely clear about the purpose of the program themselves, the "why" of M3 was not fully communicated to many students during implementation. When asked about the extent to which the purpose of the program was presented to students, the partner teacher at North Country asserted, "It wasn't." Other teachers at North Country also observed that the "why" of M3 was not clear to students. As one teacher explained, "I saw how it was relevant to them, but I think the clarity from the very first day of why is this important to you, why should you care about it, was difficult for some of them to see." According to this teacher and a few others, some of the challenges associated with student engagement stemmed from their not having a clear sense of why M3 was relevant and how it could benefit them in their academic and personal lives. For this reason, they believed it was

critical to clearly establish the purpose and relevance of M3 from the beginning of the program and reinforce those ideas throughout its duration.

More hands-on and kinesthetic activities. Another area for growth in the program identified by youth facilitators and teachers alike was the integration of more hands-on and kinesthetic activities into the curriculum. Youth facilitators overwhelmingly suggested that students were most engaged with the curriculum during activities that incorporated movement and opportunities for participants to interact. In contrast, youth facilitators reported that students were most disengaged during sessions that relied more heavily on lecture and the delivering of information. Based on these experiences, youth facilitators recommended limiting the time spent lecturing and increasing opportunities for movement and interaction in future iterations of M3. As one youth facilitator put it, "I think the giant point here was that instead of just doing slides or just reading to them, we need to have something that engages them more, get them out of their seat, moving. I know that if a teacher does that in the classroom, the class goes by super fast, and you actually learn something, instead of being like I don't know half the words you're saying." Some of the activities that youth facilitators suggested were most engaging for students were the Kahoot games, riddle activities, and matching games. Numerous youth facilitator comments during focus groups suggested these types of activities should be used more frequently than lecture and text-based instruction to more deeply engage students with the curriculum.

Communication with teachers. A final area for growth in the program that emerged from focus groups was enhancing communication with the flex/support block teachers who shared some responsibility for supporting the implementation of M3. At North Country, one of the teachers suggested they had little understanding of M3 prior to the first session. This teacher said, "I think that one suggestion for next year is again, we didn't know what, as teachers, we didn't know what this was. We didn't get any heads up about it. We were completely blind." This individual went on to suggest that if flex block teachers had a greater understanding of M3 prior to the first session, they could have supported program implementation by providing students information about M3 and its purpose in the weeks leading up to its launch. Teachers were unable to prime students for the program in this way because they were unsure themselves about what it would entail. One of the M3 partner adults at North Country acknowledged that they (the M3 partner adults) should have had a meeting with the flex block teachers to inform them about the program but also identified some extenuating circumstances at the school that made it difficult to hold such a meeting. Regardless of the circumstances, teachers' experiences at North Country suggest it is imperative to fully inform educators about the program prior to its launch so they can effectively support its implementation.

Focus groups also revealed some uncertainty among teachers about how involved they should be during the sessions that youth facilitated. This uncertainty about involvement related both to participating in sessions as members of the learning community and stepping in to support classroom management. With regard to general participation in M3 sessions, one teacher at North Country said, "I'd be curious what the kids thought about our participation and questions. 'Cuz again that was the bounds that I wasn't sure of what I should do or be. We kind of all participated in a degree but yet really wanting the kids to so it shouldn't have been us answering." This teacher's comment suggested he was uncertain about how involved he should be in asking and answering questions to support student learning. Another teacher expressed similar uncertainty about when and how frequently to step in to help manage student behavior. This teacher said, "I wasn't sure how much to step in and take charge. I didn't want to take away from the student leaders, but at the same time there's only so much – I mean – they have the

experience." In some ways, this lack of clarity about when and how frequently to address student behavior contributed to some of the challenges youth facilitators experienced with classroom management. Based on these teachers' comments and experiences, it will be important for future iterations of M3 to prioritize clear communication of roles, responsibilities, and expectations for educators who will be in classrooms supporting youth during the facilitation of the M3 curriculum. Indeed, this was a recommendation offered by one of the North Country partner adults who suggested they would need to clarify youth and adult roles when they took on M3 the following school year.

Conclusion

This evaluation suggests that the M3 program contributed to a variety of positive outcomes at BFA Fairfax and North Country Union High School. After engaging with the M3 curriculum, a greater percentage of students at BFA Fairfax demonstrated beliefs associated with growth mindset through the answers they provided on the post-program survey. Similarly, students reported more positive self-talk on the post-survey compared to the pre-survey. Although few students demonstrated an in-depth understanding of concepts such as mindset, metacognition, and neuroplasticity in the definitions they offered at the end of the program, many showed greater understanding of these terms on the post-survey than they did on the pre-survey. Collectively, the survey results indicate that M3 helped students take a positive step toward developing the mindsets and understandings of how their brains work that will support their ability to take ownership of their learning and become more self-directed learners.

The positive outcomes of the M3 program extended beyond students' emerging understandings of concepts such as mindset, metacognition, and motivation. The youth who participated in M3 as facilitators perceived personal growth in their skills as collaborators and communicators and their confidence in themselves more generally. In this way, M3 served as a valuable flexible pathway for youth facilitators to develop and demonstrate their proficiency in transferable skills that the Vermont Agency of Education has determined to be critical for all high school graduates. Additionally, the findings suggest M3 represented an effective means for fostering youth leadership, particularly at BFA Fairfax. Participating in the M3 program helped develop youth facilitators' capacity for and interest in future leadership roles. M3 also allowed the entire ninth-grade class at both schools to see their peers in these new leadership roles, which some teachers suggested was an important step for their schools. In these ways, M3 contributed to a variety of positive outcomes at both schools.

In addition to the successes and positive aspects M3, there were some perceived areas for growth in the program. Two of the identified areas for growth related in some way to communication. Youth facilitators called for clearer communication from UP for Learning during recruitment and training about the purpose of M3 and what their involvement in the program would entail. Although the purpose and role expectations may have been described, a number of youth facilitators walked away from recruitment and training without a clear understanding of them. Clearer communication of the "why" of M3 during the training could have helped youth facilitators establish the purpose of the program for students, which some focus group participants suggested was not made explicit during implementation. Teachers also called for clearer communication from youth facilitators and M3 partner adults about the expectations for their roles during M3 sessions. Many teachers did not know how involved they should be in addressing student behavior during the M3 sessions, which contributed to some of the challenges youth facilitators experienced with classroom management. Finally, youth

facilitators suggested the most effective and engaging activities for students were those that involved movement and interaction and therefore recommended more hands-on and kinesthetic activities be incorporated into the M3 curriculum in the future.

References

Saldaña, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). Thousand Oaks, CA: SAGE Publications, Inc.