The PowerPlay Entrepreneurial Program in New Brunswick, Canada: Qualitative Findings on Implementation Progress and Impacts on Students

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Contents

EXECUTIVE SUMMARY

The present evaluation study was conducted by the Center for Research and Reform in Education (CRRE) at Johns Hopkins University to examine qualitatively the Young PowerPlay Leaders (YPL) project with regard to (a) implementation activities and fidelity; (b) program impacts on student engagement, self-efficacy, school attendance, and academic achievement; and (c) program experiences and perceptions of effectiveness by students, teachers, and administrators.

During the 2022-23 school year, the registered charity Young Entrepreneurs of Canada Association (YE-Can), received funding from the Government of Canada to implement a Young PowerPlay Leaders project to bring extracurricular programming to four provinces across the country. The project was designed to engage underrepresented youth that are connected with YE-Can's PowerPlay Young Entrepreneurs program in after-school workshops and events that would empower them to be more successful in school. This funding was made possible by the Employment and Social Development Canada Department through their Supports for Student Learning Program.

Given the goals of the YPL project, the key focus of the present study was assessing, using qualitative methods, the impact of the extracurricular programming on the educational growth of students. Given that we, as external researchers, were not familiar with the in-school program, it was decided that the field work should include school visits for the following two reasons:

1. It was important to see the impact of the PowerPlay Young Entrepreneurs (PYE) in-school program in terms of engagement, curriculum, and dynamics. With this experiential background, we would be better prepared to understand the connection with the extracurricular programming (i.e., topics, instructional approaches, and student experiences).
2. The classroom visits also would enable us to better interpret how the extracurricular programming impacts students' success during the school day (i.e., applying skills in the classroom, leadership roles, engagement, etc.).

Method

Research Design

The study design included two research components. One was a *broader* examination, using an online survey, of the perceptions and experiences of student participants in seven implementing after-school sites in New Brunswick, Canada. The second component consisted of *replicated case studies* entailing more intensive examinations of four schools using PowerPlay in northern New Brunswick and three in

southern New Brunswick. For the latter sites, we observed their in-school programs during the school day, although all offered extracurricular programs as well. The sample consisted of diverse schools that were at different stages of implementation and seemingly representative of participating schools province-wide. Two CRRE researchers visited each school for a full day to observe PowerPlay classes and/or club activities and interview teachers, administrators, and students. In addition, researchers in northern New Brunswick also interviewed diverse community stakeholders.

Research Questions

Although this study was mostly qualitative and, in part, inductive in orientation, it was guided by specific interests of PYE in examining its implementation and efficacy. Major research questions were:

1. What goals and needs motivated schools to adopt PowerPlay?
2. In what ways did schools implement PowerPlay?
    a. What grades?
    b. What schedules and structures?
3. In what ways and to what degree were teachers prepared to implement PowerPlay?
4. What do teachers and administrators perceive to be the main benefits of PowerPlay for students?
5. What do teachers and administrators perceive to be barriers to effective implementation?
6. What are students' reactions to PowerPlay?
    a. Impacts on them?
    b. Likes?
    c. Dislikes?
7. What are recommendations for program improvement and potential scale-up?

Results

Results from the study survey and case studies at the seven visited sites revealed strong and consistent support for PowerPlay from all stakeholder groups. Both in-school and extended learning programs appeared both engaging and educational for participating students. In turn, study participants offered recommendations for ensuring the sustainability and continuous improvement of PYE at their schools and nationally.

Survey Responses

Across the six schools that participated in the survey component, the 140 student respondents expressed predominantly positive reactions to PYE:

- Approximately, 80% agreed that they enjoyed being in PowerPlay, that they would recommend PowerPlay to their friends, and that participating in PowerPlay could have a long-term impact on their future.
- Eighty-five percent "somewhat" or "very much" found that PowerPlay made learning more fun, while increasing their interest in learning new topics (76.2%).
- Close to three-fourths found that PowerPlay increased their ability to overcome problems.
- Notably, in extending the influences of PYE outside the program, over two-thirds (68.3%) reported an increase in their confidence as student learners.

The most frequent open-ended survey responses described benefits of PYE in the areas of education, entrepreneurship/business, fun learning, creative skills, friendships, and future job prospects.

Case Studies

Results from program observations, focus groups, and interviews at the visited sites were synthesized to address the major research questions that framed the study.

Goals and Needs. There was strong consensus by program participants and stakeholders that PowerPlay was adopted to support several key needs of students and their communities both in the after-school program, which was the focus of the YPL project, and in-school program, which we observed in the southern region. In the communities involved, educators noted challenges that their predominantly low-income and underserved student enrollees were facing due to lack of exposure to practical life skills and access to technology, effective adult mentors, and post-secondary educational and career options that they could pursue after graduating high school. They also saw their students benefiting significantly from PowerPlay's active, experiential learning modes emphasizing peer interactions and solving real-world problems. School administrators valued PowerPlay as a means of developing stronger connections with the community and outreach to parents.

Implementation Approaches. Although the PYE "curriculum," teachers' manual, Business Planning Kit, videos, and other tools and materials establish a core in-school program structure, what we observed and heard from participants reflected extensive site-based adaptations within that foundation. For in-school programs, we observed an approach in two schools, which we labeled the "Innovator Teacher" model. Here, an inspired individual teacher, comfortable with experiential learning, is given primary responsibility and ample autonomy to implement the program as thought best to accommodate students and class schedules. We also saw different approaches to using PYE class time. At two schools, the class is typically devoted to the standard PYE product-development activities. At another school, product work occurs but substantial

class time is used to expose the students to entrepreneurial concepts and practices through group discussion, guest speakers, and videos.

The YPL after-school programs likewise varied considerably beyond the core PYE framework. One school runs a fairly traditional after-school program attended by 100 students. Another school offers both an in-school program and extended learning program during an after-school activity period. A small rural K-12 school offers after-school programs on a variety of PowerPlay themes, but similar to two of the southern schools, a "teacher innovator" has been instrumental in designing and promoting program activities with PowerPlay's support. Most unique was a First Nation school serving a very high-need student population. While the other three northern schools chose to use funding from the YPL project for technology support, this school's principal opted to spend the money on bringing in guest speakers and connecting to the community, such as local entrepreneurs and community elders. The principal felt that this was more in keeping with the philosophy of the school, would have greater impact, and was more sustainable.

Teacher Preparation. The PYE teachers interviewed indicated that minimal training was needed to initiate the in-school program and that they became more confident and proficient as they used it over time. They gave high praise to the teacher's manual for the in-school component, which was described as providing effective preparation for leading and assigning PYE lesson activities. The Business Planning Kits (student workbooks), in turn, guided students through the steps of planning, developing, and ultimately selling their products for profit. However, teachers also noted areas where, as PYE continues to develop and reach more schools, professional development could be expanded:

- Teachers lacking skills in problem-based learning may need more training and coaching to implement PYE effectively.
- For program sustainability, each PYE school must plan for volatility in staffing and the continuous selection and preparation of new PYE teachers and club leaders.
- A popular suggestion was for the national PowerPlay network to facilitate collaboration between schools and after-school clubs, convene intermittent national or regional remote meetings, and share best practices on their website.
- Several teachers recommended that when they initially became involved with PYE, they would have benefited from a half-day live professional development session with national or regional PowerPlay leaders.
- Teachers in general, but more so in the in-school context, feel less prepared to lead "advanced" PowerPlay offerings that go beyond the core "Business Planning Kit" curriculum for students who continue the program in higher grades.

Perceived PowerPlay Benefits. Many positive impacts—including personal and unique experiences of the informants—were identified in both in-school and after-school settings.

- Involving students in highly engaging interesting, real-world experiential learning
- Increasing students':
    - Interest in learning
    - Self-confidence
    - Communication skills
    - SEL skills
    - School attendance
    - Problem-solving ability
    - Perseverance
    - Awareness of postsecondary and career opportunities for them
- Connecting students to local businesses, community leaders, and entrepreneurs

For schools and teachers, major benefits identified included:

- More engaged students
- Increased connection to the community
- Increased connections to parents (through the PYE activities and showcase events)

Perceived Barriers/Challenges. Relative to their reactions about program benefits, teachers and students identified many fewer concerns or perceived barriers to achieving PYE goals. For teachers, the primary challenge was scheduling time for completing the six program modules and having students ready to showcase their products. Some teachers and administrators also expressed concerns about possible inequities created between students whose families could loan them money or provide special materials for making products and those from low-income homes. For administrators, as likely would be expected for any supplementary program, the biggest challenge was selecting and scheduling PYE classes given ever-changing staff and enrollments each year.

In the extended learning YPL programs connected with the Northern schools, a barrier for some students was being unable to stay after school due to lack of transportation or family obligations. At two of the schools, it was therefore decided to offer the classes in a dedicated after-school programming block that was finished in time for students to catch buses. For the most part, these challenges were described as locally based and intrinsic to the many demands on schools and families rather than concerns about the YPL programming.

Students in general expressed minor, often idiosyncratic concerns about PYE. The most common (but still a small percentage of responses) was that the program can be fairly demanding and pressured. No major intrinsic weaknesses of either the in-school or after-school offerings emerged, other than perhaps stronger time pressures imposed at some sites.

Conclusions and Recommendations

Drawing from all findings in this study, our primary conclusion is that PowerPlay is a popular supplementary school program that appears to be achieving its major educational objectives, whether offered in-school or in an extended learning context. Relative to other school programs, PYE seems easy to implement with regard to teacher preparation and resources. It is particularly well suited to middle school curricula and students, although we and several teachers and administrators saw definite potential for age-appropriate extensions in their local schools to upper elementary grades and high school. Importantly, the vast majority of students enjoy the PYE class/YPL club time, while also feeling that they are benefiting educationally, personally, and socially. While PYE is applicable to students from any socioeconomic level, the YPL project prioritized lower-income, geographically isolated communities where students normally would have limited exposure to real-world entrepreneurial ventures, projects, and mentoring. Community leaders and stakeholders likewise viewed the program as furthering community-to-school connections, thereby potentially revitalizing both.

Below are recommendations that we believe to be the most strongly supported by our findings and relevant considerations for continuous program development:

- Expand and continuously update the PowerPlay website to facilitate networking and sharing of best practices between PYE schools and YPL clubs.
- Convene remote meetings at least yearly to provide PYE schools and YPL clubs with new information on program resources and strategies and promote a national community of practice.
- Increase PYE guidance to schools on:
    - Ways of adapting implementation schedules for the six modules and structures to best fit local resources and needs.
    - How to implement PYE most effectively in French immersion classes, where special materials and added time may be needed.
    - Strategies for connecting with local businesses and community entrepreneurs who can serve as models and mentors.
    - Diversifying program activities for students who participate for multiple semesters or years.
    - How to manage PYE loans to students for purchasing materials so that inequities between those from higher- and lower-income homes are minimized or eliminated.

For YPL projects that involve groups working together to make and sell products, further guidance was suggested to:

- Manage the money collected from product sales to ensure security, accountability, and fairness in charitable, school, and/or student payments.

In conclusion, the present research study provides informative qualitative perspectives on PYE's uses and benefits in both in-school and extended learning contexts. Based on stakeholder feedback, PowerPlay programming appears to engage students in ways that builds their confidence, connects them to their schools and communities, and develops their planning and project management skills. There is also suggestive evidence that for many students, PowerPlay improves self-efficacy and school attendance. Such impacts, in turn, should positively influence academic achievement over time. Further research, using intervention-control group comparisons, is recommended to explore and document these potential impacts quantitatively.

The PowerPlay Entrepreneurial Program in New Brunswick, Canada: Qualitative Findings on Implementation Progress and Impacts on Students

Introduction

The present evaluation study was conducted by the Center for Research and Reform in Education (CRRE) at Johns Hopkins University to examine qualitatively the Young PowerPlay Leaders (YPL) project with regard to (a) implementation activities and fidelity; (b) program impacts on student engagement, self-efficacy, school attendance, and academic achievement; and (c) program experiences and perceptions of effectiveness by students, teachers, administrators, and community stakeholders. PowerPlay Young Entrepreneurs (PYE) is designed to be a highly engaging experiential learning program for Grades 4 through 8 classrooms. The target population is underrepresented youth that may be at risk of dropping out of school (e.g., Indigenous, and other racialized youth, students in rural communities in lower socioeconomic areas, students with disabilities).

As described in detail in a subsequent section, PowerPlay is implemented both as the PYE in-school and YPL extracurricular programs. All schools that participated in this project offer the in-school program, as well as the latter as an option for interested students. In the present study, we examined three in-school programs in the southern region of New Brunswick and four after-school programs in the northern region. The in-school PYE program was designed for students to create their own business ventures by identifying a “product” to create, conducting market research on its appeal to potential consumers (e.g., fellow students, parents, community members) and appropriate price range, marketing it through announcements and advertisements, and selling it at a “showcase” event with guidance from teachers, program materials, and peer interactions. Intended drivers of student interest and engagement include:

- Using real-world connections (e.g., making real money, starting businesses, and donating to charities) to make learning more meaningful and relevant.
- Empowering students to take charge of their learning and make their own decisions.
- Helping students feel safe to explore and make mistakes.

For the extracurricular program, the PowerPlay team engages with educators outside of regular school hours to select students to participate in extracurricular opportunities. The primary goal is to help students become more engaged and resilient learners that are more successful in school and more equipped to pursue post-secondary education. The main activities include entrepreneurially themed educational programming and project-based learning both inside and outside the classroom, as well as dynamic community dialogue events. In some cases, the extracurricular YPL

programs were created to provide opportunities for students and teachers to learn together.

PYE Background and Key Project Components

The Charity – Background. As described by its co-founder, Young Entrepreneurs of Canada Association (YE-Can) is a registered charity with a mandate to help middle school-aged Canadians develop the entrepreneurial mindset, skills and relationships needed to thrive in our rapidly changing world. Their experiential learning model focuses on social-emotional development and engages diverse groups of youth in meaningful real-world learning experiences. Students take charge of their learning, stretch their capabilities, and explore new ways of thinking.

YE-Can's flagship program is PowerPlay Young Entrepreneurs, which is Canada's largest teacher-facilitated entrepreneurial education program, having already reached over 120,000 middle school students. PYE engages middle school students in exploring the world of business. Participants develop products, business plans and marketing materials, and then showcase their achievements and earn money at an event called the "Young Entrepreneur Show." They also learn about social responsibility by donating a portion of their profits to charity. The program has been running in Canada for over 20 years.

The PowerPlay charity also offers opportunities for young people who have completed their school-based program to continue to strengthen their entrepreneurial skills through a variety of extracurricular activities and community-based events outside the classroom. In some cases, workshops and events are offered before or alongside the implementation of PYE to help youth develop skills needed to be more successful as entrepreneurs.

A priority for PowerPlay is to help marginalized youth become more successful in school and better equipped to pursue post-secondary education. Participants work with stakeholders to identify, understand, and remove barriers to success for diverse communities and students. Their inclusive educational programming is easily adapted to meet the needs of complex learning environments. Additionally, mentorship plays a significant role with the charity's extracurricular programming. As youth develop projects or solve problems with adult and peer support, they explore their talents, acquire new skills and gain confidence in their ability to set and reach their goals.

The YPL Project. During the 2022-23 school year, YE-Can received funding from the Government of Canada to implement a Young PowerPlay Leaders (YPL) project to bring extracurricular programming to four provinces across the country. The project was designed to engage underrepresented PYE youth in after-school workshops and events that would empower them to be more successful in school. This funding

was made possible by the Employment and Social Development Canada Department through their Supports for Student Learning Program.

The YPL project provided extracurricular mentorships and competency-building opportunities for underrepresented middle school-aged youth that are most at risk of academic disengagement (including students from lower socio-economic and/or rural communities, Indigenous youth, and students with learning differences). The project was designed to specifically support youth that were directly involved with PYE. The primary goal was to help them become more engaged and resilient learners who are more successful in school and more equipped to pursue post-secondary education. By developing peer and mentor relationships, students were expected to feel connected to an entrepreneurial community and see education as being important to their futures.

YPL Project Approach. At the beginning of the YPL project, PowerPlay engaged educators outside school hours to help inform the solution and to obtain their recommendations for students that might benefit from the extracurricular programs. All teachers expressed interest in being involved directly with the extracurricular programs, so it was decided to engage them as PowerPlay Club Leaders who would be directly involved with implementation. The rationale for this approach was that by exposing the PowerPlay Club Leaders to the growth of students in the extracurricular programs, they would then be able to nurture that growth back in the classroom.

Entrepreneurial Learning in K-12 Education

To evaluate program implementation and its impacts more formally, the present, external study employed the case-study and survey design described below. As background for better understanding components of the PYE design and its implementation, we begin with a brief review of literature on the theoretical foundation and application in K-12 settings of entrepreneurial learning.

Enrichment programs focused on building student skills related to entrepreneurship have grown substantially in prevalence over the past decade (The Network for Teaching Entrepreneurship, 2017; Elert, Anderson, & Wennberg, 2015). Generally aimed at adolescents, as well as students in the later years of high school, these programs typically aim to introduce students to concepts related to entrepreneurial competencies, innovation, opportunity recognition, business, design thinking, networking, and creative problem-solving, and many include elements of project-based and experiential learning (The Network for Teaching Entrepreneurship, 2017; Reilly & Laurenzano, 2017; Laurenzano, Reilly, & Ross, 2022; Silander et al., 2015; Master, Schulker, Grimm, & Xenakis, 2017; Sirelkhatim & Gangi, 2015; Johansen & Schanke, 2013; Martínez-Gregorio, Badenes-Ribera, & Oliver, 2021).

Though programs of this type have been researched quite regularly, as delivered to post-secondary students as well as early-career adults, far less research has been

conducted on programs targeting entrepreneurial learning earlier in life, such as those delivered during the elementary and secondary school years (Johansen & Schanke, 2013; Reilly & Laurenzano, 2017). Of the studies that have been conducted on programming of this type delivered to school-aged children, the vast majority rely on qualitative methods and point to conclusions that, while quite promising, are mostly suggestive in nature (Martin et al., 2013; Reilly & Laurenzano, 2017). Though not yet fully developed, findings from this emerging research base do point, however, to the potential value this type of programming can provide in enhancing learning outcomes for young students. Perhaps most consistently, many of these studies point to the ways that entrepreneurial education can positively influence students' development of entrepreneurial mindsets, as well as their agency to foster social change (Martin et al., 2013; Wardana et al., 2020; Master, Schulker, Grimm, & Xenakis, 2017; Nakkula, Pineda, Dray, & Lutyens, 2003; Nakkula, Lutyens, Pineda, Dray, Gaytan, & Huguley, 2004; Reilly & Laurenzano, 2017; Laurenzano, Reilly, & Ross, 2021; 2022). Other common outcomes include improved engagement with learning and school (Nakkula, Pineda, Dray, & Lutyens, 2003; Rasheed & Rasheed, 2003); enhanced and/or more specific college and career aspirations (Master, Schulker, Grimm, & Xenakis, 2017; Laurenzano et al., 2021; 2022); and enhanced skills associated with social-emotional development, particularly those related to self-efficacy (Silander, Chavez-Reilly, & Weinstein, 2015; Rasheed & Rasheed, 2003) and "growth mindset" (Nakkula, Lutyens, Pineda, Dray, Gaytan, & Huguley, 2004).

These studies provide a promising empirical and theoretical foundation for the PYE program examined in this report. Uniquely, PYE is a structured program permitting site-based adaptability across a broad swath of diverse Canadian schools. While a natural priority is serving students predominately from underserved and low-income populations, PYE is designed for and offered to students from varied background, cultures, and socioeconomic levels.

Study Methodology

Research Rationale and Design

Given the goals of the YPL project, the key focus of the present study was assessing, using qualitative methods, the impact of the extracurricular programming on the educational growth of students. Given that we, as external researchers, were not familiar with the in-school program, it was decided that the field work should include school visits for the following two reasons:

1. It was important to see the impact of the PowerPlay Young Entrepreneurs in-school program in terms of engagement, curriculum, and dynamics. With this experiential background, we would be better prepared to understand the

connection with the extracurricular programming (i.e., topics, instructional approaches, and student experiences).
2. The classroom visits would also enable us to better interpret how the extracurricular programming impacts students' success during the school day (i.e., applying skills in the classroom, leadership roles, engagement, etc.).

The study design included two research components. One was a *broader* examination, using an online survey, of the perceptions and experiences of student participants at seven implementing schools in New Brunswick, Canada. As described in more detail below, the survey contained closed-ended and open-ended items regarding program activities, students' reactions to them, and their most and least favorite activities.

The second component consisted of *replicated case studies* entailing more intensive examinations of four schools using PowerPlay in northern New Brunswick and three in southern New Brunswick. The schools were selected by PowerPlay leaders in consultation with our evaluation team to provide a sample of diverse schools that were at different stages of implementation and seemingly representative of participating schools province-wide. Two CRRE researchers visited each school for a full day to observe PowerPlay classes or after-school clubs, and interview teachers, administrators, and students. In addition, researchers in northern New Brunswick also interviewed a diverse group of community stakeholders. Specifically, there were two teams of researchers, one in the North and one in the South. The key difference between the two regions was the amount of time that schools have been using PowerPlay. The Southern schools were new to PowerPlay while the Northern schools have all used PowerPlay for several years.

Another key factor is that we only visited schools that were directly involved in the extracurricular programming. Given the assurances we gave schools and all study participants who were interviewed or observed at those schools, we use codes rather than school names (e.g., S1-S3 for Southern Schools) and general references to people ("the teacher," "a Grade 6 student," etc.).

The after-school programs in the South were designed to help students be more successful with their implementation of the in-school PYE program that was being implemented at the same time. The researchers visited classrooms in three schools in the South, all of which were relatively new to PYE. The students and families at two urban schools face significant socio-economic disadvantages; the third school is in a rural community. It is important to note that all three of these schools had after-school programs that were designed to help them be more successful in the classroom with PYE and other areas as well. These were operating in conjunction with the in-school program. A brief description of the extracurricular components is:

- School S.1 had access to a series of workshops/events that were held off site with a community partner. The students worked directly with industry professionals. Key topics included communications and videography.
- School S.2 had a YPL after-school program to help students achieve their PowerPlay goals. Some of the students learned new skills related to technology to make commercials and others related to equipment needed to make products.
- School S.3 had a YPL after-school club to support students with all aspects of the PowerPlay business planning steps. This included mentorship sessions on a variety of topics including ideation, product design, and marketing.

In the North, the YPL after-school clubs and events were designed to build on their previous PowerPlay experience. The clubs provided space for students to further develop entrepreneurial skills such as creativity, critical thinking, and communications as they learned how to use different technologies to achieve their goals. The events typically involved bringing youth from around the region together to participate in dynamic real-world challenges. Mentorships were also a key component of YPL programming in the North.

Instruments consisted of a student survey, adult interview protocols for teachers and administrators, and a student interview/focus group. Copies of each are provided in Appendix A.

Research Questions

Although this study was mostly qualitative and, in part, inductive in orientation, it was guided by specific interests of PowerPlay in examining its implementation and efficacy. Major research questions were:

1. What goals and needs motivated schools to adopt PowerPlay?
2. In what ways did schools implement PowerPlay?
    a. What grades?
    b. What schedules and structures?
3. In what ways and to what degree were teachers prepared to implement PowerPlay?
4. What do teachers and administrators perceive to be the main benefits of PowerPlay for students?
5. What do teachers and administrators perceive to be barriers to effective implementation?
6. What are students' reactions to PowerPlay?
    a. Impacts on them?
    b. Likes?
    c. Dislikes?

7. What are recommendations for program improvement and potential scale-up?

Measures

Data sources for the current study include:

Student survey. The student survey contains eight closed-ended items and four open-ended items. The closed-ended items asked students to indicate their level of agreement, on a four- or five-point Likert-type scale, with statements regarding their enjoyment of PowerPlay and the degree to which it affected their perseverance, interests, community connections, and future educational or career interests. Open-ended questions asked them to describe how PowerPlay has helped them, the components/activities they most and least liked, and recommendations for improvement. Students were informed by initial instructions that their participation was voluntary, and their responses would be anonymous.

The standard, recommended administration procedure for survey administration designated a PowerPlay teacher or club leader to select a particular day or days in early March for students to complete the survey by using available school devices, their own smartphones, or some combination. Given differences in schools' technology resources (hardware and internet access), class schedules, and the number of PYE participants, we expected alternative procedures to be used, such as having large or small groups complete the survey at the same time, individual students to complete it at an available free time (e.g., when a class assignment was completed), and other opportunities. In anticipating that technology access might be limited at some schools, we also provided an option to use paper forms, although no schools utilized this option. One or more surveys were completed by six schools, whereas no surveys were submitted by two schools. There were 146 students who opened the survey, while 143 provided a response to at least one item. The total number of completed surveys was 140, for a very high 97.9% completion rate. While we lack specific data on which students completed surveys, we believe that non-participation would have been much more attributable to schools' conditions and efforts for involving them rather than to students opting out based on liking or not liking the program.

Student Focus Group. At each school, we conducted one or more (generally two) student focus groups, or at one site, individual interviews. Group size varied but typically ranged from five to ten members. Some were one grade only, and some were mixed. Sessions typically lasted about 20 to 25 minutes. The questions asked were parallel to those in the survey but were open-ended to stimulate conversation and richer responses. The focus group and interview sessions were recorded to support accuracy of data content and analysis.

Teacher, Administrator, and Stakeholder Interviews. Teachers and administrators were typically interviewed individually. Sessions depended on schedules

but nearly always lasted at least 30 minutes and sometimes close to an hour due to the high enthusiasm of the interviewee for providing input. Core questions addressed how the school learned about PYE; how it got started; typical schedules and activities; student participation; implementation needs and experiences; preparation and PD; and most centrally, impacts on students and the schools. The interview session was recorded to support accuracy of data content and analysis.

In the northern district, interviews were also conducted with a variety of community and district stakeholders. These interviews did not follow a strict script but, rather, were more free-flowing conversations about community interest, involvement, and perceptions of PowerPlay and its impact on students and the community at large. The interviews ranged from 30 to 60 minutes. Researchers were accompanied by one or both of the community outreach coordinators at most interviews. The researchers took notes during each session, but also recorded them to support accuracy of data content and analysis.

Classroom observations. At five of the seven visited sites, two CRRE researchers observed at least one and sometimes two classes during PowerPlay activities. The observations were open and informal, not involving any type of evaluative or structured responses. Generally, observers tried to focus on three areas: (a) student activities, (b) teacher activities, and (c) degree of student engagement and on-task behaviors. Where the activity was student-centered, which was highly frequent, the observers were able to move around the room and chat informally with students and the teacher about the activities taking place. The researchers took notes during the session and, at its completion, discussed their perceptions with one another to increase accuracy.

Analytical Approach

Narrative responses provided by interview and focus group participants and open-ended survey responses were analyzed qualitatively using a combination of techniques outlined by Miles, Huberman, and Saldana (2020), along with Glaser and Strauss's grounded theory approach (1999). Participants' responses were recorded and then coded using an iterative process that identified overarching themes. A similar approach was taken with analyzing and reporting data gathered through classroom observations. Survey closed-ended responses were analyzed descriptively to report means, frequencies, and percentages of ratings selected.

Results

The following sections present findings from the analyses of data from the case study visits and student survey. For the case studies, the results are organized in terms of themes directly associated with the evaluation questions and thereby draw from the multiple data sources (i.e., the observations and interviews) relevant to each. The

Southern schools visited all implemented extracurricular and in-school programs, but we visited only the latter given scheduling and interest in understanding both types of impacts on students. In the Northern schools, we visited extended learning programs only. Because program histories and approaches varied for the two regions, individual narratives for them are included in these sections.

Case Studies

Goals and Needs in Program Adoption

Southern Schools - (In-school Program)

All three schools visited in the southern region conveyed similar intrinsic goals for being interested in PYE but different histories and precipitating factors. Their commonality was serving high numbers of low-income and underserved students who lacked opportunities for exposure to entrepreneurial concepts, effective adult mentors, and community connectedness. A second common rationale was to involve their students more in engaging and intrinsically interesting higher-order learning activities such as inquiry, project-based learning (PBL), and problem-solving. The three schools, however, arrived at PYE in different ways.

School S1 in an urban area, had a fairly new principal and recent, unexpected increases in enrollment due to the relocation of families (some immigrants) to the city. Accommodating these and returning students with resources and class assignments was the highest priority. When the principal received an invitation from a PYE consultant for the school to learn more about and possibly adopt the program, he notified his middle-school teachers of the opportunity and asked whether any might be interested in the possibility. A new teacher who had recently transferred from another school immediately expressed interest and was selected to pioneer the program. She formally implemented it in the spring semester of 2023 in a self-contained Grade 6 class containing many underserved students (the other two Grade 6 sections were departmentalized). Many of her students also participated in YPL extracurricular workshops designed to help them succeed as young entrepreneurs.

School S2, a small K-8 school in a low-income urban setting, had heard about PYE several years ago, mainly through networking in the province and contacts by the principal, who is an exceptionally strong advocate of experiential learning and social-emotional development (SEL). PYE seemed a natural fit with this orientation, while adding an explicit connection to real-world focuses (entrepreneurship, careers, and life skills). A Grade 4 teacher (no longer at the school) piloted the program with great success in terms of student engagement and enjoyment. Several middle-school teachers were favorably impressed and wanted to expand the program, especially after being contacted by a business community organization interested in bringing the program to local schools. It is presently being implemented in Grades 6 to 8 by all

teachers, although several assume more active roles than others. School S2 also runs an after-school YPL club to provide additional support for entrepreneurial activities.

At School S3, a small rural school, the principal was an advocate of PBL and became interested in PYE when he heard that it was being used in the province. The program was implemented in the fall of 2022 by a single teacher as a combination in-school and after-school program for Grade 8. In spring of 2023, with both the principal and the initial implementing teacher on extended leave, the interim principal brought in a retired teacher who was very skilled in PBL and recruited him, as a supply teacher, to continue PYE as an in-school program. Once onboard, he quickly designed and taught PYE classes to students in Grades 6 and 7. Because his employment was temporary, he was developing plans to have other teachers take over the program when he left in March. YPL workshops were also offered to this cohort.

Northern Schools – (Extended-learning PYE Programs)

The four schools visited in the northern region of New Brunswick have all developed and begun offering YPL extended learning programs to allow interested students the opportunity to continue to develop their entrepreneurship skills. These programs are enabling students to "run" with the skills learned during the in-school program and are serving as a conduit for greater interaction between these schools and their surrounding communities. Key precipitating elements are opportunities to continue their interests and further their skills in entrepreneurial activities, expand businesses that they already started, provide products to clients in the community, and for members of the community to serve as mentors to the students by providing instruction and encouragement, as well as being role-models. The community piece is particularly important to School N4 from a cultural standpoint since the PYE program is proving to be an excellent mechanism for building ties with the community and finding mentorships for students in areas that celebrate their cultural heritage.

The four schools are at various stages of developing these extracurricular programs, with School N1 having established the most comprehensive program to date with respect to its program's reach, both within and beyond the school. The development and success of these extended learning programs is the result of strong, ongoing interest from student participants from the in-school program, as well as the dedicated support of school administrators and teachers at these schools. The latter are acting in response to the perceived positive program impact on their students in areas including engagement, learning, attitudes, and behavior. In addition, YPL is providing support to each of the schools for these programs that serve to broaden the scope of its in-school program.

Northern schools began implementation of the in-school PYE program in the past 3-6 years, although the disruption of COVID-19 significantly impacted the number of "true" years the program has been in use. The latest expansion of the program,

occurring during the past two years, is in the form of an extended learning program. Each of the four schools now has an extended learning program in place, based on PYE, to allow interested students the opportunity to continue to develop their entrepreneurship skills and to further the impact of the program within both the schools and the communities they serve.

School N1, a K-8 school located in a small urban area in rural New Brunswick, serves approximately 350 students from the largely middle-class local communities. After participating in the in-school PYE program in 2021-22, a group of the middle school students launched their own business called Gator Designs, which operates during lunchtime. The YPL project has provided coaching opportunities and equipment for the students and supported them with making products and then selling them at school-based and community markets. There presently are approximately 100 students in their club. Students participating in the program have also had the opportunity to participate in several Saturday events including a full-day Innovation Day event at a local hotel. Two YPL staff members facilitated this event with the support of local guest mentors. Students spent the day identifying real-world problems in their communities and devising solutions. The club's leader related that for her students, being in this venue "... made them feel important. I saw kids come out of their shell. My Grade 6 boys, the hyper ones in the room, they were the ones who won the pitch, giving a great talk."

School N2 serves approximately 550 students and is similar to School N1, being a K-8 school located within a small urban region in rural New Brunswick. The school has seen a rapid increase in enrollment due to the influx of newcomer families to the region. Some of the school's students do not live in proximity, and there is a large economic gap between students. For some students, a lack of transportation and/or family needs prevent them from being able to participate in the afterschool activity period during which the extended PowerPlay program is offered. All middle school students in the school participate in the in-school program each year and the school organizes an associated high-profile showcase event for the entire community. According to the principal, this event also lets younger students see what the older students are doing and gets them interested in the program. The principal also noted that the school has always had collaboration/passion projects as part of the curriculum. The YPL extended learning opportunities are "a bonus, and great fit for that." In 2022-23 PowerPlay offered several events and after-school workshops for selected students. It also provided equipment training and support for both teachers and students.

School N3 is a K-12 school serving a low SES rural community. The school is small, with approximately 300-400 students in total. The immediate community (likened to a village) has no industry and a small number of shops. The success of the school's program is largely due to the leadership provided by one of the teachers who championed the program, has given students the opportunity to pursue business in a rural area, and has inspired outstanding students through the PYE program. The YPL

offerings include multiple after-school programs on a variety of themes (communications, videography, makers, pitching) to the middle school students at School N3 since September 2022. Many students have also participated in local events that PowerPlay has offered on the weekends. Because it is a K-12 school, all grade levels are aware of the program, and students can visually see the activity space, which is in an atrium in the center of the building. Because it is such a small community, students generally know each other, even across grade levels. While the program is implemented in the middle grades, we talked to one Grade 11 student who was continuing his own projects and serving as a mentor to a younger student. All the participating students have taken part in the PowerPlay in-school programming in the past. Many of the after-school students have been participating and selling at farmers' markets with the support of the YPL team. PowerPlay has also been providing after-school clubs with equipment and training for students to make their products through this project.

School N4 is a First Nation school, located in rural New Brunswick. The school serves over 300 students in Grades Pre-K-8. It is a federal school that runs its extracurricular programs as part of the traditional school day. The school is trying to assist its students break out of the cycle of poverty through education and community connections. PowerPlay has been collaborating with this school for three years and the program is having a transformative impact on students and teachers. In the fall of 2022, they worked with all Grades 4, 5, and 6 students. PowerPlay supported the in-school program with two special events: (a) A high-profile entrepreneur who came to speak to the students, and (b) an inspirational entrepreneur who had grown up in this First Nation gave a presentation to the students, helped them set up their displays for their final sale, and then coached the students as they interacted with customers.

Program Implementation Approaches

Southern Schools - (In-school Program)

Orientations to PYE. PYE was implemented in adaptive ways at the three schools to accommodate site-specific goals, resources, and conditions. School S1 employed what might be labeled the "Innovator Teacher" model. Here, one teacher expressed high interest in the program and was trusted by the principal to run with the ball and make it happen as she saw fit. Given enrollment and staffing priorities, the school adopted a somewhat conservative approach of implementing PYE in that teacher's self-contained Grade 6 class only. All other middle school classes maintained a regular departmentalized structure, where students were taught core subjects by different teachers. In the PYE class, the teacher chose to set aside dedicated time throughout the day for the students to engage mostly in PYE activities. Her rationale was that over the course of the six modules, she could best implement PYE in a concentrated and continuous way. Core instruction in reading, math, and science could be integrated somewhat with the PYE activities (and we saw this in math) but then accelerated once

PYE was completed. “The PowerPlay [student work] book created a document outlining all the standards it covers,” this teacher explained. With this guidance from PowerPlay, she was not worried about learning loss as a result of somewhat pausing regular instruction for a six-week period.

School S2 took a more expansive “distributed-type” approach by engaging all middle school teachers in PYE. Several teachers, however, had much greater program involvement and more formal time to implement PYE activities in their regular classes. For example, we observed students in a math class working on their products intermittently in combination with solving math problems. At this school, one particular teacher was using PowerPlay in French immersion. Unlike at other schools, students in School S2 had the option to complete PowerPlay with a partner instead of individually.

School S3, similar to School S1, employed the Innovator Teacher Model—in this case, through the leadership of a temporary teacher with a passion for PBL but limited experience with the formal PYE model. Similar to School S2 the program was implemented in all middle school grades, with Grade 8 completing the program in the fall and Grades 6 and 7 in the spring. Some Grade 8 students completed the program as part of French immersion. The teacher taught classes with dedicated time specifically focusing on PYE. Our impression is that he used class time less than at the two other schools for students to actually make products (with more production done at home) and much more for instructor-led class discussion on entrepreneurial concepts and strategies. Based on his experiences with PBL and strong focus on PYE during his temporary appointment, this teacher conveyed many insights regarding what he believed to be effective PYE practices currently in place and offered some recommendations for improvement. Among them were:

- To organize and explain materials, such as folders, student workbooks and business kits, and parent information kits, so that they would be used properly.
- Conducting two shorter classes a week rather than one long class that the school previously scheduled.
- Seeking guidance from PowerPlay leaders when any uncertainties arose.
- Providing small-group opportunities with teacher-directed tasks for students to discuss and record ideas about their products and learn communication skills.
- Pairing special needs students in lower grades with upper-grade student mentors.
- Creating linkages of middle school PYE experiences to entrepreneurship programs in Grade 9 and beyond.
- Assigning at least two teachers in a single school to work on PowerPlay so that one teacher is not responsible for the entirety of implementation. “I

could see this working with a lead teacher, a support, and a parent committee," the teacher said.

- Providing an option for students to work on social projects that benefit their school, as well as businesses producing products for profit.
- Starting small with implementation and resisting the urge to scale up before the school is ready. "Be thoughtful in planning. Don't hothouse it if it's not ready to grow in a school community if you're scaling up. Don't take a step forward if you're not ready," the teacher said.

Classroom Observations. Our classroom observations of the in-school PYE sessions provided snapshot views of exemplary lessons. Based on interviews with the teachers, we believe that the lessons were typical of the approach used on most days. In School S1, the Grade 6 class observed was busily engaged in making their products for the first half of a two-hour period. While they worked individually, they were seated in clusters, which permitted and at times promoted occasional social interactions (displaying products, helping others, and informal bantering). Overall, the students were engaged and on-task, with minimal behavioral disruptions. During the second half of the session, the teacher called on students to present their products to the class and solicit suggestions for pricing. Every student, even one whose family just emigrated from the Ukraine and spoke little English, participated. Most students were attentive and respectful of the presenters, although in this more passive mode, there were a few incidents of off-task behavior. The teacher used the pricing focus to integrate math instruction involving integers ("How many products would you need to sell to pay back the loan?"). Clearly, the intentionally composed small class size of 19 students facilitated PYE implementation with regard to classroom management and teacher monitoring and support of students.

At School S2, we observed two classes, a Grade 7 and a Grade 8 PYE class. Compared to the School S1 class, the Grade 7 class was larger (about 25 students), while the Grade 8 class was comparable in size. Both classes were more heterogeneous in student abilities, with several included special needs students. Most of the approximately one-hour class periods were devoted to product development. Students gathered the materials and worked at their desks, while—in the Grade 7 classroom—the teacher, a high school volunteer, and three staff assisting students with disabilities provided monitoring and coaching. In the Grade 8 classroom, the teacher and two assisting staff provided monitoring and coaching. In the Grade 7 classroom, given the larger class size and spacing of desks, some off-task behavior occurred but, in general, the majority of students seemed engaged and productive. Very little off-task behavior occurred in the Grade 8 classroom, and students seemed equally engaged and focused on their products. Similar to School S1, the teacher in the Grade 7 classroom intentionally integrated math instruction with PYE, using worksheets and some whole-class instruction. The Grade 8 classroom focused more heavily on making products throughout our observation.

The PYE class at School S3 was quite different from the two others observed. Here, the teacher used the class time for exposure to business concepts through class discussion. No time was devoted to working on products (which, according to students, was done more at home). The main focus of the class was a guest speaker, one of the school staff who engaged in an entrepreneurial venture involving growing plants in the school's greenhouse and selling them to the community. Two students served as interviewers using a set of questions about the activity. The instructor then led a class discussion on the main takeaways relevant to PYE concepts. Next, the instructor played a video of a group of Canadian middle schoolers presenting a product on the television program *Dragon's Den* (*Shark Tank* in the U.S.) before beginning a whole-class review session on PowerPlay business vocabulary. The teacher then divided the class into groups to begin a simulation activity involving pricing example products and finding the products' breakeven point. The teacher finally led a whole-class discussion on the meaning of being an entrepreneur, local business opportunities in the province, and competition versus collaboration. Throughout the class period, students remained engaged, on-task, and highly motivated.

Northern Schools – (Extended-learning PYE Programs)

Due to the funding agency's guidelines, grant monies could only be spent on after-school or "found"-time programming. As a result, students observed in northern schools were participating in YPL-related activities largely during "found" extracurricular time outside of regular school hours. One school shortened its lunch period and gave students the option to participate in place of recess, while two others offered the program after school for students wanting to participate. Extended programs typically meet once a week for one hour, with some additional time being allocated for attendance at project-related events and markets. Since School N4 is under federal jurisdiction, grant monies could be used in whatever way the school chose and throughout the school day. The schools are at various stages of this process with School N1 having made the greatest advancement in this respect—it has established a successful business model for selling a selection of items in the school lobby, at markets, and on the internet. They are now acquiring community partners for which to design products and researching how to set up an e-commerce website.

PowerPlay, through the grant, has provided support for these extracurricular programs to broaden the scope of their in-school program. Additionally, the development and success of these extended learning programs is increased from strong, ongoing interest from students, as well as the dedicated support of school administrators and teachers. Many of the latter conveyed seeing the value of the program for their students in terms of engagement, learning, impact on student attitudes and behaviors, as well as its inclusiveness. The extended learning programs are enabling students to "run" with the skills learned in the in-school program and are serving as a conduit for greater interaction between these schools and their surrounding communities.

Strengths of the extended learning programs were described as:

- Establishing/building connections with the community.
- Allowing interested students the opportunity to continue to expand their entrepreneurial skills.
- Technology usage: Three of the four northern schools have begun using more sophisticated fabrication equipment and apps to manufacture their products. These resources allow them to scale-up and to create more professional looking/refined merchandise. School N4, in keeping with their school philosophy, has focused its program on building culture and community. This is being accomplished, in part, by inviting elders from the community to visit the school to teach students to make traditional crafts, and by hosting successful community entrepreneurs who have shared their stories with students and served as mentors.
- As a result of the technology piece, students in those schools now tend to work in their area of strength. In contrast to the former in-school program where they did all the work on their own product from conception to sale, YPL students tend to work on specific areas of preference such as painting, design, or videography, breaking into groups to do these activities. As one teacher said, “That’s the new business model.”

Club Observations. Several teachers and principals described extended learning program sessions as being “organized chaos.” When asked, a teacher from School N4 laughed and reported that, “It's loud, but it's engaging and exciting and awesome.” Our observations of these PYE extended sessions at two schools allowed us to see the types of activities being engaged in by the participating students.

At School N1, 10+ students arrived at the school’s designated activity space after lunch and promptly got to work with little or no interaction or instruction needed from their teacher. The activity space was equipped with a Glowforge (3-D laser printer); vinyl cutter; heated press; laptops; and all materials needed for projects being worked on, including paint, vinyl, wood, pins, etc. Most students worked in small groups at raised tables, working on a variety of products in varying stages of production. These products included cutting boards, pop-sockets, vinyl logos for hoodies, and pieces such as pins and earrings decorated with the school’s logo. All appeared to be familiar with the general workings of Glowforge and several were using the Glowforge app to work on designs. Discussions between students could be heard regarding color selections and future plans for making gibbets and chess pieces. Students were all very engaged during the session. The teacher circulated around the room assisting with questions but also encouraged students to problem solve on their own. A student who was attending the activity for the first time that day was welcomed and encouraged to join one of the groups. At School N3, students were observed meeting in the school’s activity space during the hour immediately after school ended for the day. A group of 4-5 students were engaged and focused in creating product designs to submit as part of a bid to

create merchandise for a local non-profit, with one group writing the script for a video advertisement. The remaining 4-5 students in attendance, however, appeared to be less engaged with YPL activities.

Although scheduling did not permit observations at Schools N2 or N4, teachers from the schools provided descriptions of a "typical" session. At School N2, two adults are usually present with approximately 35 students. One adult normally stayed in the space and prepared activities for events such as Spirit Week while the other worked with individual groups of students as needed. Recent products created at this school included candles, bookmarks, ornaments, and logoed t-shirts. Time is also devoted to discussing and working on the marketing side of the enterprise. Students get to choose what they work on. At School N4, a teacher described a typical session as students working at their own pace, going through the steps of product development including design, fabrication, and marketing. They spent time building prototypes and then asking classmates for feedback before making improvements to their design. This school has tailored all funding for PYE project materials to come from the school, so that students without support from home can participate without anxiety about costs. Students take out small "loans" from the school and pay them back with the profits from their sales.

Additional Observations. During one site visit, two teachers from School N2 visited the activity space of School N1 for a special meet-up with six School N1 students in the YPL extended learning program. This was an opportunity for the visiting teachers to pick up tips for expanding their after-school club and also a chance for the students to share their expertise. The visiting teachers and the host students quickly established a friendly dialogue and spent a productive hour together discussing the students' products, source of materials, and how they went about determining sale prices. Students provided a tour of the equipment in their center, as well as showing the teachers samples of their products. Students also showed the teachers how they created some of their designs using the Glowforge app, which they have been using for roughly one year. The teachers, in turn, were able to then share some tips on sizing within the app so there was a two-way exchange of knowledge.

During another special session, 14 students from School N1 were observed attending a class on videography presented by a technology mentor. The students utilized iPads to create slides for demonstrating and advertising their products. As a group, they discussed their slides and how to refine them by adding logos and text boxes. The instructor went on to show the students how to use the Keynote app. Plans were for them to return during a regular YPL club session to work on commercials for all of their products. The students were all highly engaged during this workshop.

Teacher Preparation

Southern Schools (In-school Program)

All four teachers who were interviewed (two at School S2) were positive and confident about their preparedness to implement PYE, while emphasizing that much was learned through discovery and their own experiential learning with PYE. All reacted favorably to the helpfulness of the teacher's manual, online videos, and the student workbook ("Business Planning Kit") provided by PYE. One teacher said,

> *The manual was great…. For a brand-new teacher it might be overwhelming. But you can muddle through, and it is very well outlined. It depends on the type of person, but if they're willing to jump in, it's right there.*

One teacher especially praised a personal online orientation session provided by PowerPlay co-founder, Bill Roche. Our impression was that all teachers would like to have (or would recommend for others) a half-day of similar live training, although it wouldn't be absolutely essential for teaching PYE classes effectively. A few teachers conveyed that the most helpful preparation was having prior experience in PBL. None of the teachers we interviewed was conducting PowerPlay as part of their schools' French immersion programs, but several discussed other teachers at their schools who were doing so.

Northern Schools – (Extended-learning PYE Programs)

In the words of the School N2 teacher, in order to make the extracurricular activities a success, "… time, bodies, and money are what you need." The four teachers who were interviewed in the northern schools (one at each school) spoke enthusiastically about the YPL project and related that they had received "incredible" support both from their school administrations and from the YPL team members when implementing the extended learning programming with their students. The teacher from School N2 commented, "As a teacher, it was like a dream for [PowerPlay] to come here and say, 'Listen, we want to support you.'" Like their counterparts from the southern schools, they stated that they needed to spend time planning initial sessions, and for those leading after-school clubs at schools N1, N2, and N3, learning how to use some of the fabrication equipment. A teacher from School N1 commented that "Keeping up with [the students'] pace has been the big challenge."

Teachers from several schools stated that they spend a considerable amount of time doing project-related paperwork such as handing out forms and ordering supplies which can eat up a lot of time. Those from all four schools acknowledged that a typical PowerPlay session might look "chaotic" and a teacher from School N3 commented,

> *It definitely has less structure than what I would have in a normal classroom setting … even though it may look chaotic, at the end of the day, it's still kind of focused because they do have this kind of vision in mind and where they want to get to.*

Interestingly, the teacher from School N4 stated that implementing PowerPlay has led her to change the way she runs her traditional classroom by giving students greater autonomy over the pace of their work and where they accomplish it within the classroom.

Teachers emphasized the need for there to be a sufficient number of adults present during YPL sessions and appreciated the manpower provided by PowerPlay in the form of two Community Coordinators and their PYE District Lead. Such additional adult support has been especially valued as the programs are growing in popularity within and outside the school.

Finally, teachers from Schools N2 and N3 both commented that in order to successfully run the extended learning program, they had to be willing to admit to their students that they were themselves "students" at this, learning as their students learned. The teacher from School N2 related that she and her co-teachers had made a "huge" mistake on a program-related matter and that they had shared this with their students. She added, "The teachers need to be vulnerable with the kids … and some people just can't get there." The teacher from School N3 echoed this sentiment saying, "I'll be a student with them," while acknowledging that not all teachers are willing to give up the role of "teacher." He also mentioned the benefit of implementing in a K-12 school, saying that teachers from other district schools did not get to experience the "continuous flow of skill sets" in their students over many grades. He made an example of a PYE Grade 7 student from the school who went from podcasting about school and local community events to launching a national radio program in Grade 11. He remarked, "That's the thing that keeps you going, is those kids that have that passion to keep doing their interest."

Program Benefits for Students: Teacher and Principal Views

Southern Schools - (In-school Program)

The four teachers and three principals interviewed identified a number of benefits for students. Perhaps the most salient and important perceived impact was the development of self-management and problem-solving skills. Also significant was the students' specific, experiential learning of business practices involving research, production, marketing, pricing, and sales. "I think for a lot of our kids, they learn the best, honestly, through collaboration and through hands-on learning. [PowerPlay] really meets their needs. It's very engaging," one interviewee conveyed. With regard to school attitudes and behavior, interviewees described most students as being highly engaged with PYE and YPL activities and even wanting not to be absent from school so as not to miss them. Several teachers and principals felt certain that school attendance was actually higher during the six-week PYE offering. Said one teacher:

> *I had one kid who was barely coming to school, but she is so excited about PowerPlay that she has been here every day. It is getting some of my kids here. For the first half the year, I never had all my kids here every day, and now I've had five days where I've had all the kids here.*

A general belief was that the program was beneficial for academic achievement, not necessarily in the traditional way of boosting test scores but in promoting interest in learning, motivation to achieve, and greater belief in students' abilities and opportunities for success in their continued education and careers. Additionally, teachers and principals appreciated that students of all ability levels could participate in the same program, even students with special needs, which was generally challenging in their regular curricula. The focus on community and charity was another benefit, helping to link students to their communities in a positive way. At one school, for example, students often chose for their donations charities that their own families had used in recent years, such as women's shelters or food banks. Finally, principals and teachers felt the program helped to build stronger relationships between teachers and students. Said one principal, "[The PowerPlay teacher] has been able to have really strong relationships with her kids. And to foster good behavior, good student citizenship, good participation … even right down to [relationships with] some of the parents."

Northern Schools – (Extended-learning YPL Programs)

The four teachers and two principals interviewed identified a variety of benefits for students, many of which matched the benefits described by teachers in the southern schools. These included growth in student confidence, independence, perseverance through problem solving, and taking ownership of their work. The principal from School N2 noted that he liked "… that this pushes kids a bit to stick to something and to follow through." Interviewees also spoke about the increased collaboration they witnessed between students. The teacher from School N1 described improved communication with students working together and providing one another with constructive feedback. The teacher from School N4 saw this extending beyond the program's doors, observing that the program—seemingly by helping students in different grades get to know one another—had reduced the number of students fighting on the playground at school. As an example, she said, "Nobody was really stealing the ball from anybody anymore, because you were kind of helping out [one another] just last period."

Additional benefits included:

- Participation in events such as visits by guest instructors and speakers, attendance at school-based and community markets, and trips to various sites in the surrounding communities.
- Hands-on experience with sophisticated fabrication technology.

- Development of "real-life" skills. One teacher has written letters of recommendation for students attesting to their ability to build websites as a result of their participation.
- Opening doors to community participation through student interactions with local leaders and businesses.
- Giving back to the community through students donating 10% of their profits to causes of their choosing.

Interviewees also spoke of the importance of the inclusiveness of PowerPlay saying that it offered a safe space where all students could participate and where students who did not normally excel in school, students who were socially challenged, and students with disabilities could all contribute and, in some instances, become leaders. One teacher gave an example of one special needs student, "… wanting to be a part and isn't sporty, so he's doing this. He feels connected. His grandmother says this is the best year he's ever had. He's never felt connected before."

In-school and Extended Learning Program Reactions by Students

North and South

Because we anticipated and found much overlap between student experiences and reactions in the two regions, we've combined them in this section. Students participated in five focus groups in the south (approximately 30 students total) and four focus groups in the north (approximately 30 students). Overall, they expressed positive views of PYE and YPL, identifying multiple benefits for them personally and their classmates. The latter included:

- Enjoying the program activities (making and selling products). (One student explained, "It gets my brain going and makes me creative.")
- Developing better work habits (e.g., task and time management, perseverance, planning). (Resiliency – "If you fail this time, you know to try again.")
- Working with classmates
- Learning about how businesses operate in the real world ("It's a great skill to learn, how to start a business. Most stuff in school doesn't help you in the real world," said one student.)
- Developing better self-confidence
- Learning how to solve problems
- Engaging with the community and giving back to charity
- The chance to make a financial profit. (One student explained, "A lot of people are excited to make money.")
- Increased attendance. ("Some kids usually I see don't go to school … I've seen that they go to school every day right now," said one student.)

- Learning to use equipment such as Glowforge, vinyl cutters, etc. and their associated apps.
- Learning skills that they can potentially use as adults. ("They're learning something they're really going to use in life.")
- The inclusiveness of the program. All students, including those of varying academic skill levels, students with disabilities, etc., can participate and have a chance to shine in this format.
- PYE-related activities let students put skills learned in the traditional classroom to use on something that "really mattered." Math and writing skills are both put to use (e.g., calculating cost per unit to be donated to charity, writing up a marketing plan).
- Engaging with customers at the markets. "It was fun talking to people."

Although the above listing includes the more salient responses, some students also gave more personal reasons for liking the program. One male student, for example, disclosed that his friend (an outgoing female member of the focus group) told him he needed to develop better social skills and that PYE might help (presumably given the many social interactions required in marketing research, group work, selling, etc.). He and she then both confirmed that he was making progress. At a different school, a student remarked, "Because I've done PowerPlay, I had the courage to do a yard sale with my grandmother last summer … it was so much fun!" In a third example, a student volunteered what he most liked was the way that the program included students with disabilities. Our observations at that school in particular, and others as well, indeed confirmed fluid integration of special needs students (some being supported individually by special education staff). One student, who was said to have severe autism, was not able to participate in the full PYE regimen of creating a business plan and marketing a product but was extremely engaged in creating a book of word searches to sell. Other students seemed very accepting and supportive of his efforts. Said one student:

> *I enjoy how [PowerPlay] is open for everyone. There's this kid in our class; he has autism. And sometimes he can't participate in everything that we can. So, I like how he has a chance to participate in this. Because he can find something he enjoys doing.*

When asked how they felt about PYE when they first heard about it, students relayed mixed reactions. The majority were interested and positive, as they anticipated that the business activities would be fun. "I was excited. It gave me something to look forward to at school," one student explained. A number of others confessed that they felt somewhat anxious about it. One concern was the pressure of having to choose a product to make and then succeed in creating and selling it. Simply put, this type of assignment was totally new and a bit intimidating based solely on the description. A female Grade 7 student described her initial concern as having to do public speaking. She confirmed, however, that although she still felt some anxiety, she was becoming more confident as the program continued. Later that day, in the PYE class, the same

student had been selected to interview a guest speaker in front of the class and performed quite capably.

Students voiced very few dislikes of the program. While rigor and challenge naturally occur in entrepreneurial ventures, these very conditions are naturally likely to provoke fewer positive reactions than are other program features. The most common concern was feeling stressed within the in-school periods to complete their products on time. This concern was shared by students completing PYE in English and also as part of French immersion, with French immersion students requesting extra time as a result of the extra challenges of the language component. A related pressure was wanting to sell enough products to pay back their loan, with several students worrying that if they could not pay back their loan from the school using profits from their products, they would have to use their own savings to make up the difference. Isolated reactions were that making products every day was boring at times, repeating the program in another year by following the same routine was less engaging, and the math involved was sometimes too difficult. Students from School S1, who completed PowerPlay activities entirely at school, wished they could bring their workbooks and products home to keep working after school.

Students participating in the extended-learning program also had few dislikes they could name. At several schools, students spoke of having been "rushed" in trying to get prepared in the days leading up to holiday market events. This caused anxiety for some students, which seemed quite natural given the program's rigor.

Recommendations for Improvement

Given the mostly positive reactions by students and practitioners toward PYE in-school program and extracurricular YPL offerings, their recommendations for improvement represented minor enhancements rather than substantive changes in program structure or procedures. Suggestions included:

- Ensuring that teachers and principals understand that the PYE program scheduling and pacing are intended to be flexible and adaptive to school needs, provided that the six program modules are covered. Nonetheless, schools are busy places that face unforeseen challenges and changes during the year. Particularly in the winter when days were lost to school closings, students and teachers often felt pressured to have everything done and products ready for sale at Showcase events. Thus, while promoting program flexibility, PYE should still emphasize the importance of a defined beginning and end date, lest the program be lost in the shuffle of everyday school life.

- Emphasizing the importance of a group purchasing trip in the curriculum. In two schools, classes took group field trips to local discount stores to source materials. Teachers felt the exercise of pricing materials and buying in bulk

was a valuable tool, one that was lost when materials were ordered by parents at home. On the other hand, depending on the particular context, there are also potential advantages in students and parents jointly engaging with the program at home.

- Adding resources to the PowerPlay website as "best practices" and as support materials are developed over time. Additionally, adding to the existing online platform of resources photos or videos of products from each year of implementation, so that students have a bank of exemplars to inspire product ideas.

- Minimizing or eliminating parent loans for purchasing product materials. Such can create hardship on lower-income families and also inequities where some students are able to develop more elaborate products than others.

- Increasing communications and outreach to parents and community members to publicize PYE and promote broader support. Creating a parents' night event as an introduction to PowerPlay was a popular suggestion, as well as enlisting the help of skilled parents or community members in making technically difficult products.

- Holding occasional webinars for all PYE schools and YPL clubs so that best practices can be shared, and a broader community established.

- Additional guidance on how to embed PYE in the existing school curriculum. One principal felt some teachers still saw PYE as an add-on, rather than a core component. Teachers should be encouraged and reminded by principals and peers to reference the curriculum tables made available by PowerPlay.

- Additional guidance on how teachers could continue using PowerPlay even after the product fair is complete. "My biggest question is where do I go from here; how do I implement this once we've had our fair and PowerPlay is done?" one teacher asked.

- Where relevant, increase accessibility to extended learning programs for students with limited transportation or other obstacles that prevent them from participating in programming scheduled during after-school hours.

- Offer additional events/learning opportunities for students, held both at school and out in the community.

- Provide additional adult mentors/support to facilitate extended learning programs ("Having more adults in the room would be a big help … don't have

the support at home so it needs to happen here.") There are sometimes too many kids and programs have to turn students away.

- Offer additional, specialized learning opportunities for extended learning program students in areas such as marketing/advertising, accounting, public speaking, and design.

- Offer more training sessions to teachers.

- Networking and PD that could grow PowerPlay programming across the district or nationwide.

Stakeholder Interviews

In conversations with district and community stakeholders in northern New Brunswick, an oft-repeated message was that the region has an "entrepreneurial culture." Interviewees spoke to PYE tapping into that "fertile ground" and benefitting from the "maker mindset" that has become ubiquitous and attribute its success to coming along at the right time while providing tools to enable users to do things they've never been able to do before. This "entrepreneurial mindset" is seen as being critical in diversifying the region's economic growth and opportunity. According to many of those interviewed, the message in the past to the community's youth was that to be successful, you had to leave. And many did. Facing an aging and declining population, emphasis has been placed on supporting youth in general, while providing new and exciting options to support staying. As one community leader stated,

> *…there's never been a better time to have any opportunity you want, here at home. Both the labor need plus the technological evolution that we've seen, especially around COVID…you can now do really anything from anywhere. The messaging to the kids is that there are endless opportunities, and you can do them all right here at home.*

Many in the community see PowerPlay as the conduit to make the connection between entrepreneurship and the message that one does not have to leave to become economically stable. Through the PYE and YPL offerings, students are given access to options they might never have been exposed to. Community leaders and school district administrators have a strong working relationship between themselves and the schools and believe that PYE fits in that as well. For example, one community leader, who is also an entrepreneur, is actively engaged with PYE students, visiting the schools and sharing his experience. This community leader would like the messaging now to be, "You should go away if that's your choice, but it doesn't have to be the only choice."

Two district administrators reiterated the idea of the region's entrepreneurial spirit or mindset. One, a former principal in a school where PYE was implemented, believes that the program shows students their own potential, including that owning a business is a real possibility. Historically, schools included an entrepreneurship/business course in their exploratory class period. However, this former principal noted that the course had to be made fun and interesting in order for students to buy into it and PYE filled that role. He also noted the importance of community support in contributing to the program's success "... in the sense that they see the value of what this may be doing for their kids."

A second administrator was involved in the decision to implement PYE in the district and was attracted to the curriculum because it targeted Grades 4-8—noting that data show students begin to disengage in Grade 6—and that PYE was one of the only programs for middle school. According to this interviewee, implementing the program was "... not a great big lift." He liked that the curriculum was "structured and simple," readily accessible for teachers, the resources required little professional learning, and were not cost prohibitive. He noted that the YPL after-school clubs have become so successful that they are trying to become self-sustaining in terms of supplying their own raw materials. He also noted the long-term impact on students:

> *You're using those tools for the entrepreneurial spirit, entrepreneurial mindset, but you're also learning tools that you can then problem solve and take to do anything in any job throughout your whole life. We saw the connection there.*

He attributes the success of PowerPlay in the schools to "... the idea of putting the kids first; give them something they actually care about; are passionate about; solving problems; getting them out of their seats and doing something."

In conversations with additional community stakeholders, community support for youth entrepreneurship was evident. At a career/tech education center, one leader stated, "The idea of the entrepreneurial mindset is certainly spread though the district." Two leaders from the center shared that while their program is designed for high school students, they offer activities for middle school students active in PYE. For example, they collaborated with PowerPlay to offer a YPL event at an airplane hangar where students learned about the aviation industry. These leaders, both of whom were former PYE teachers, report that they see exposure to PYE in middle school carrying through to high school students, some of whom are now attending their center. The leaders stay connected to PYE by hosting events, such as the previously mentioned activity, but also by encouraging center students to serve as mentors to younger students. These leaders see the middle schoolers' exposure to the center as a potential pipeline for future students seeking related career and post-secondary education options.

The final interview was with the president of a non-profit organization who sees their engagement with PYE as an opportunity to stay connected with the local

community. At the time of our visit, the organization was preparing a request for proposals, to be shared with schools implementing YPL, to fill merchandise needs for their gift shop and an upcoming event. The president strongly supports sourcing the organization's needs locally and wants to engage with youth as a way to reintroduce them to the organization which, among other things, teaches conservation. This individual stressed the importance of teaching skills missing in the workforce today, such as communication, along with developing skills in a business environment. They are "keen" on PowerPlay because they believe it provides the opportunity to see "… that they [the students] can have a good life through entrepreneurship, staying in the community."

In each of these interviews it is evident that there is broad community support from many different sectors for engaging young people in an interactive, hands-on learning opportunity in order to develop an entrepreneurial mindset, while instilling confidence and practical life skills through experiential learning. The importance of rebuilding and strengthening the community was also clearly articulated as a hoped-for outcome. These community stakeholders conveyed seeing the value in supporting youth through entrepreneurship as a means of strengthening the community by providing stable economic growth and diversity, a reliable workforce, and "effective good future citizens."

Survey Results

Students were invited to participate in an online survey administered via the Qualtrics survey platform designed to take approximately 10-15 minutes to complete. Participation was voluntary. Survey response rates from all schools are illustrated in Table 1.

Table 1

Student Survey Response Rates

	%	Count
School N1 - North	33.10%	48
School S3-South	20.69%	30
School N2 – North	14.48%	21
School N3 – North	13.10%	19
School S1- South	11.03%	16
School N4 – North	7.59%	11

Total	100%	145

Student participants represented Grades 4-8; however, the majority of survey respondents were in Grade 6, followed by Grades 7 and 8. The full distribution of grade levels is reported in Table 2.

Table 2

Student Participant Grade Levels

Grade	%	Count
4th	3.50%	5
5th	0.70%	1
6th	44.76%	64
7th	30.77%	44
8th	20.28%	29
Total	100%	143

Students were asked to identify how they participated in PowerPlay and were allowed to select more than one response. There was an even split between during and after school as the most frequent method of participation, followed by PowerPlay events, as illustrated in Table 3.

Table 3

How Students Participate in PowerPlay

	%	Count
During school	36.99%	54
After school	36.99%	54
PowerPlay Events	22.60%	33
Other (please describe below)*	3.42%	5
Total	100%	146

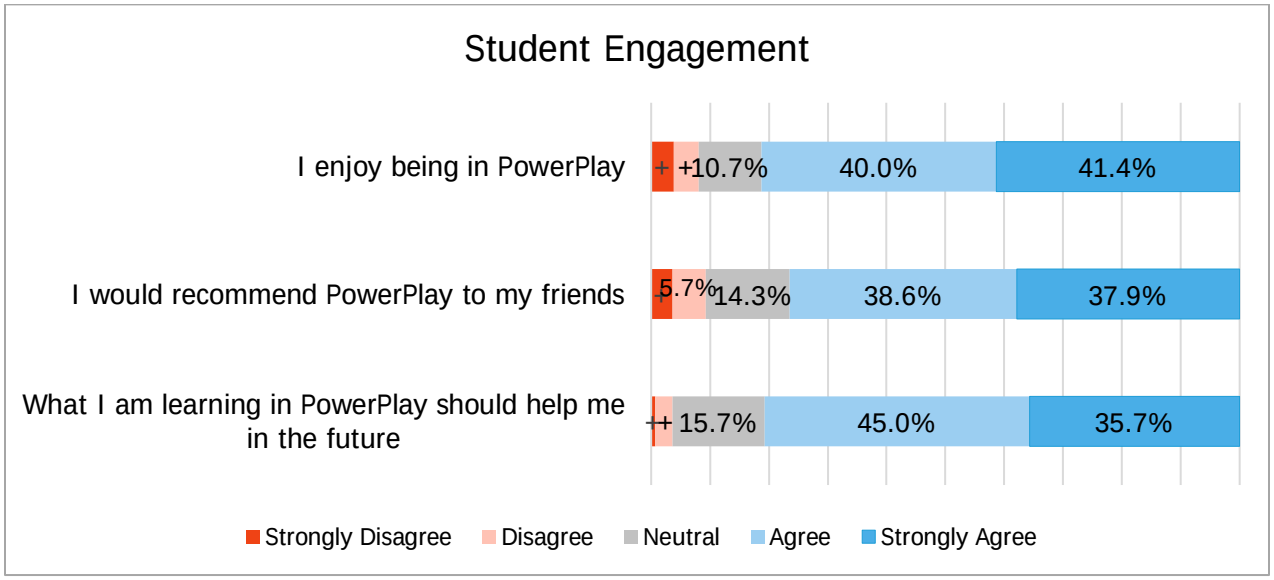
*Other included Innovation Day (2); We Believe Event; Rodd Hotel; market

Student Engagement

Figure 1 illustrates the distributions of student responses to three survey items regarding their engagement in the PowerPlay program.

Figure 1

Student Engagement in PowerPlay



Note. + < 5.0%.

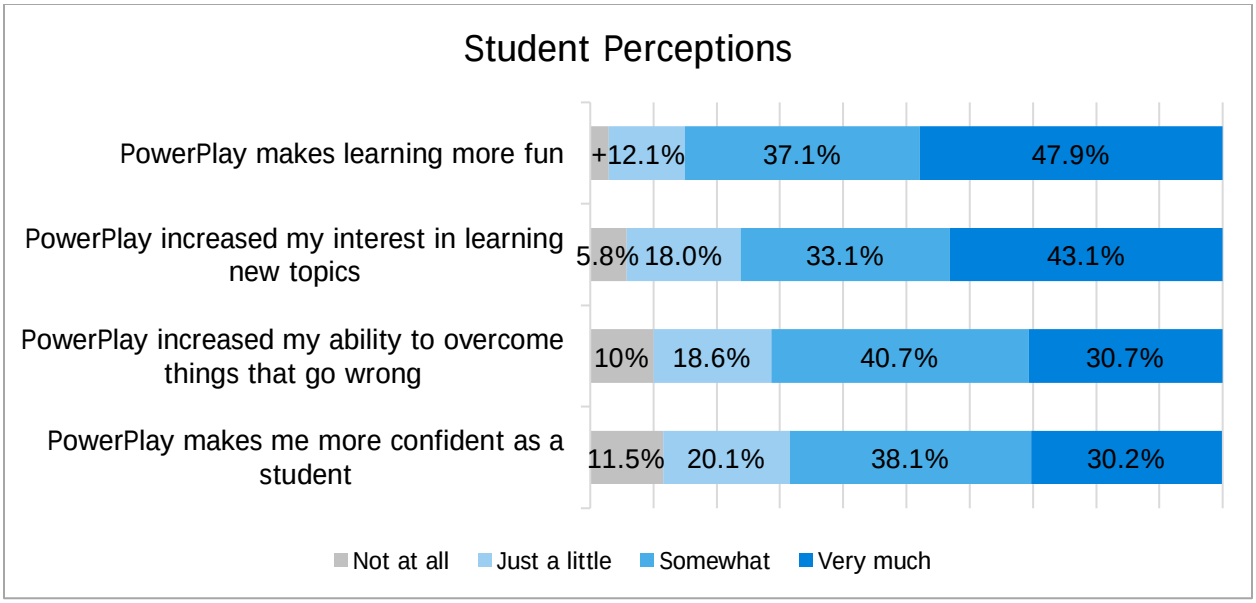
Student responses are combined across schools unless otherwise indicated. Responses to this set of questions were highly positive, with more than three-fourths (81.4%, *n* = 114) agreeing that they enjoyed being in PowerPlay, while 76.5% (*n* = 107) agreed that they would recommend PowerPlay to their friends. Similarly, 80.7% (*n* = 113) of students believed that participating in PowerPlay could have a long-term impact on their future. Responses were similarly positive to these questions from both the northern and southern school districts, however, the order in which students in the south rated these items was slightly different: (1) PowerPlay should help in the future, (2) I enjoy being in PowerPlay, and (3) I would recommend PowerPlay to my friends.

Student Perceptions

The next set of questions asked about student perceptions of their PowerPlay participation; these results are illustrated in Figure 2.

Figure 2

Student Perceptions of PowerPlay



Note. + < 5.0%.

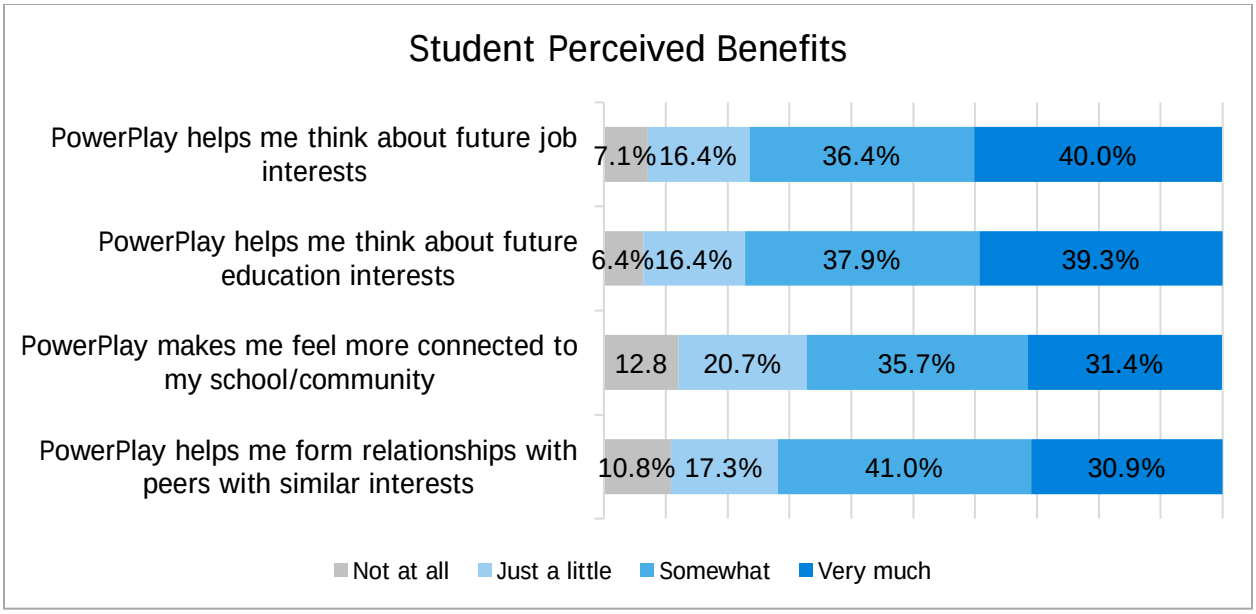
Student perceptions of PowerPlay were once again highly positive, as 85% (*n* = 119) "somewhat" or "very much" found that PowerPlay made learning more fun, while increasing their interest in learning new topics (76.2%, *n* = 106). Slightly fewer, but still close to three-fourths of students (71.4%, *n* = 100) found that PowerPlay increased their ability to overcome problems. Notably, in extending the influences of PYE outside the program, over two-thirds (68.3%, *n* = 97) reported an increase in their confidence as a student. The ratings were similar between north and south students, with the exception of the last two items being reversed in terms of ranking by students in the south.

Student Perceived Benefits

The final set of questions asked students about their perceived benefits to participating in PowerPlay as it relates to their future, strengthening bonds with their peers, and feeling more connected to their school and community. These results are depicted in Figure 3.

Figure 3

Student Perceived Benefits of PowerPlay



Note. + < 5.0%.

Students perceive that PowerPlay has influenced their thinking about future career and education interests, with more than three-fourths reporting that this has "somewhat" or "very much" been the case (76.4%, *n* = 107; 77.2%, *n* = 108, respectively). About two-thirds of students (67.1%, *n* = 94) found a closer connection to their school or community, and 71.9% (*n* = 100) reported stronger relationships with peers as a result of participating in PowerPlay. The first two items were similarly ranked by all students, but the last two items were reversed by students in the south, who rated peer relationships higher than school/community connections.

How PowerPlay Helps

In open-ended survey items, students provided feedback regarding how PowerPlay afterschool and/or events had helped them the most (21 students said they didn't know or do not attend)[1]. The prominent themes that emerged are described below in order of frequency.

Educational. Fifty students (38.2%) reported that the educational aspect of PowerPlay helped them by learning new things and "real world" skills. One student stated, "I think [PYE and YPL programs] help me a lot because the programs teach me so many different things and ways to learn." Nineteen students specifically noted learning life skills such as problem-solving, teamwork, and self-confidence. "It makes me want to learn new things," one student said.

[1] Note that some of students who took the survey in the southern region were enrolled only in the in-school program.

Entrepreneurship/business. Sixteen students (12.2%) enjoyed learning about entrepreneurial skills and building a business, as well as exposure to successful entrepreneurs. As one student noted, “I believe that PowerPlay helps students obtain the mindset of a real entrepreneur and how to become one.”

Fun. Sixteen students (12.2%) stated that PowerPlay helped them in a variety of ways, including one who said, “all of it.” Others shared that it was fun and two reported that it “cheered me up.” Many appreciated the support and time they were given to work on their projects/products.

Exploring creative skills. Twelve students (9.2%) shared that they were able to explore and further develop their creative/artistic skills and enjoyed the opportunity to express their creativity.

Friendship. Nine students (6.9%) shared that they had strengthened relationships with existing friends, but also had developed new friends as a result of their participation. As one student said: “It helps me be more independent and less shy and helps me work with people I don’t really know but by doing that I make new friends.”

Interests/Future: Six students (4.9%) discovered an interest in using the machinery provided by the program, while a like number said it helped them think about future job prospects.

What They Liked Most

Students were next prompted to share what they liked most about PowerPlay. A total of 15 students (11.3%) said “don’t know” or “nothing.” However, other students provided highly positive feedback, presented here in order of frequency:

Making products/projects. Thirty-nine students (29.3%) reported they most like making products and/or working on projects, which included using equipment like the Glowforge, 3D printer, and vinyl cutter. One student shared, “I get to work on things, and I get off my phone.”

Fun. Thirty-one students (23.3%) liked that the program is fun, they can work with friends, as well as develop new friendships through teamwork. Five students added that they liked the food, while four students enjoyed the hands-on/interactive nature of the program. One student summed it up this way, “I personally enjoy how it can help students find what they could be passionate about in a fun environment.”

Events. Twenty-seven students (20.3%) most liked the events, including the visit to Atlantic Windows, the Tareq Hadhad presentation, visits to the markets and airport, and “activities” in general.

Educational. Twenty-one students (15.8%) appreciated that they were learning new things that they would otherwise not have access to. Among these responses, five students liked the guest speakers and being able to interview people about their jobs. A handful of others reported they liked “everything,” “reading and writing,” and learning about helping others.

Being creative. Fifteen students (11.3%) shared they liked tapping into their creative nature through the maker process, including learning about art, design, and website development.

Business. Thirteen students (9.8%) liked the business perspective, including selling their products, buying other products, making money, and as one student said, “venture development.”

Communication. Nine students (6.8%) liked interacting with the public, especially when discussing their product with a customer. As one student noted, “I like how we can share our ideas if someone asks something about it.”

What They Liked Least

Students were next prompted to identify what they liked least about PowerPlay. A plurality of students (n = 39; 28.9%) had no dislikes to report, while 18 (13.3%) replied "I don’t know.” The remainder, however, provided the following feedback. An important caveat for interpreting these responses is that “least liked,” particularly for youth in an afterschool setting, represents just that—an activity less fun or favored, not necessarily a program weakness. Program developers/providers, therefore, need to consider the feedback through such lenses and only make changes where true improvement need is suggested.

Hard. A total of 22 students (16.3%) found the program to be hard, from coming up with a product, to making their product, to its being “too much like schoolwork.” Among this group, nine students specifically cited reading and/or writing as what they disliked, while eight students did not like the public speaking/presenting component.

Too much pressure. Fifteen students (11.1%) reported feeling pressured by the time constraints to complete their product, especially when circumstances were beyond their control, such as running out of material or the equipment not working. Additional responses included a lack of organization, people not cooperating, or generally “things not working.” Being informed of things at “the last minute” was also mentioned, specifically in relation to students being recorded.

Waiting. Fifteen students (11.1%) did not like how long it took to make an item, which in some cases caused a lot of sitting around and waiting. Two said they

wanted the market to be scheduled sooner, while one added they disliked having to wait for access to certain equipment.

Projects/activities. Eleven students (8.2%) disliked various projects/activities, including recording, planning Spirit Week, conducting interviews, and not having a choice regarding participation (this latter comment was offered by three students).

The market. Eight students (5.9%) simply did not like the market experience due to a number of reasons, including that they were not very sociable, the need to determine a price for their product and actively sell it, and receiving negative feedback from customers.

Missing class. Five students (3.7%) disliked missing class time in order to participate in PowerPlay, which prevented them from completing schoolwork. Because PYE is not intended to interfere with regular class time and we did not hear from any teacher or club leader about students having to miss classes to engage in PYE activities, we suspect these comments referred to isolated instances or misinterpretations of certain situations that occurred with their schedules.

Final comments provided by one or two students included not being able to attend weekend activities; students not equally sharing the workload; not having friends participate; and there being too many students in the group.

Recommendations for Improvement

Finally, students were asked to provide suggestions for ways to improve PowerPlay. A total of 58 students (41.4%) said there was no need for improvement, or they could not provide any suggestions. The suggestions that were provided appear below.

More time. This issue garnered the most suggestions, from nine students (6.4%), who wanted more time to complete their products, noting that six or seven weeks was not long enough.

The remaining suggestions were made by fewer than 10 students each, and are presented here by category:

Program expansion. Students suggested more events and/or activities be added, along with more equipment and access to the technologies needed to make products (e.g., a second Glowforge). A handful recommended providing more options for participation than after school or on weekends, especially when other activities compete for students' time, such as sports.

Curriculum. Increase access to graphic design and business planning tools as part of the YPL offerings; make lessons adaptive to student skill level, give students more freedom to work on their own; reduce the amount of required reading or make the student booklet more accessible to struggling readers; no presentations; provide one-on-one help when students need it. Have less talk and more fun, possibly adding more team games.

Reduce completion time pressures. Teachers should schedule the six-week modules over periods that allow students enough time to complete their PYE projects without stress. Such schedules will vary across schools depending on academic schedules, school events, and student needs.

Group selection. Have students change partners so they are not always working with the same group members; reduce the number of groups—there are too many trying to work on limited equipment; encourage more inclusion, especially when someone new joins a group; allow equal amount of work and product making to students who are not in the leadership teacher's class or homeroom.

Final thoughts. Have student costs paid for; expand marketing efforts to other schools and the community; allow students to shop before the market.

Discussion and Recommendations

In the present evaluation study of PYE and YPL, we collected data from multiple sources including visits to seven participating sites, classroom observations, a student survey completed by 140 students at six schools, and interviews or focus groups with multiple PYE teachers, club leaders, students, school administrators, and program and community stakeholders. The obvious limitation of this preliminary, qualitative research is its dependence on perception and anecdotal data. Further research that examines quantitative indicators of educational outcomes is one of our concluding recommendations. Clearly, however, the present study produced strong triangulation of major findings regarding program activities, impacts on students and schools, and the potential of the program for scale-up and benefit to local communities. Detailed summaries of findings from the various sources were provided in the foregoing sections of this report. Below we capsule the primary takeaways in association with the core evaluation questions that framed the study.

Goals and Needs

There was strong consensus by program participants and stakeholders that PYE was adopted to support several key needs of students and their communities. In some of the communities involved, educators noted challenges that their predominantly low-income and underserved student enrollees were facing due to lack of exposure to practical life skills and access to technology, effective adult mentors, and post-

secondary educational and career options that they could pursue after graduating high school. They also saw their students benefiting significantly from active, experiential learning modes emphasizing peer interactions and solving real-world problems. School administrators valued PowerPlay as a means of developing stronger connections with the community and outreach to parents. While the seven "case study" sites visited differed in the maturity and design of the PowerPlay programs we observed (e.g., after-school versus in-school, single teacher versus multiple teachers, etc.), all reflected structured and seemingly successful efforts to address these types of goals and local needs.

Implementation Approaches

Although the PYE "curriculum," teachers' manual, Business Planning Kit, videos, and other tools and materials establish a core program structure, what we observed and heard from participants reflected extensive site-based adaptations within that foundation. That is, in every case, students were engaged in entrepreneurial learning activities centered on program objectives of identifying a marketable product; conducting marketing research with peers on the product's appeal and salability; obtaining the funding and materials to build the product; producing enough units to repay the loan; promoting the product; and, if sales were sufficient, making a profit and donating a percentage to charity. These core activities were actualized in every case through adaptations to site-based and local needs, which in our interpretation, constituted a major strength of the PYE model.

For in-school programs, we observed an approach in two schools, which we labeled the "Innovator Teacher" model. Here, an inspired individual teacher, comfortable with experiential learning, is given primary responsibility and ample autonomy to implement the program as thought best to accommodate students and class schedules. In one case, the teacher taught a self-contained Grade 6 class where students engaged in PYE during dedicated class time but also as part of other lessons or free time throughout the day. In a second case, the teacher also served as the sole PYE instructor, incorporating varied entrepreneurial activities both in and outside the formal PYE class session. We also saw different approaches to using PYE class time. At two schools, the class is typically devoted to the standard PYE product-development activities. At another school, product work occurs but substantial class time is used to expose the students to entrepreneurial concepts and practices through group discussion, guest speakers, and videos. Consequently, the latter students spend more time than those at other PYE sites working on products outside of school.

After-school programs likewise varied considerably beyond the core PYE framework. One school runs a fairly traditional after-school YPL program attended by 100 students who elect to participate out of interest and family or teacher encouragement. Another school offers both an in-school program and extended learning program during an afterschool activity period. While some students can't

attend the latter due to transportation or family needs, all participate in the in-school program. A small rural K-12 school offers after-school programs on a variety of PowerPlay themes, but similar to two of the southern schools, a “Teacher Innovator” has been instrumental in designing and promoting program activities. Notably, in this school, one Grade 11 student mentors a younger student in their PYE and YPL projects. Most unique is School N4, a First Nation school serving a very high-need student population. While the other three northern schools chose to use funding from PYE for technology support, School N4’s principal opted to spend the money on bringing in speakers and connecting to the community. The principal felt that this was more in keeping with the philosophy of the school, would have greater impact, and was more sustainable.

A strong conclusion from our exposure to programs and interviews with participants is that PowerPlay gains increased appeal, practicality, and potential for sustainability within sites through its adaptable structure. If PYE schedules, resources, staffing, and student enrollment were highly prescribed, the vast majority of interested schools would face implementation challenges that weaken program quality.

Teacher Preparation

Ensuring that teachers are prepared to implement school programs is essential to success and buy-in. In the case of PYE, the teachers interviewed indicated that minimal training was needed to initiate the program and that they became more confident and proficient as they used it over time. They gave high praise to the teacher’s manual, which was described as providing effective preparation for leading and assigning PYE lesson activities. The business kits used by students, in turn, guided them through the steps of planning, developing, and ultimately selling their products for profit. Teachers at some schools also benefitted from having colleagues participating in PYE with whom they could share ideas.

Clearly then, an advantage of PYE relative to many other school programs is ease of implementation. The adaptability aspect, as described in the prior section, further allows teachers to design and schedule lesson activities in ways that fit their personal teaching styles and the school’s culture and conditions. However, teachers also noted areas where, as PYE continues to develop and reach more schools, professional development could be expanded:

- One consideration is teachers’ varying experience and comfort with PBL-type pedagogy. Teachers lacking such skills may need more training and coaching to implement PYE effectively. Some teachers simply may be resistant or too uneasy about student-centered learning to be good choices to lead PYE classes or clubs. Strategic teacher selection/recruitment therefore is important as a front-end activity.

- All schools experience teacher turnover, with some having particularly high levels due to their location and economic conditions. The "Teacher Innovator" highlighted in this report, for example, may join a school for a few years, jumpstart PYE, and then move on to other opportunities. For program sustainability, each PYE school must plan for volatility in staffing and the continuous selection and preparation of new PYE teachers and club leaders.

- While teachers overall were positive about their PYE experiences, some—especially those who are the sole program participant—feel isolated and most are curious about what PYE teachers and YPL club leaders elsewhere are doing to achieve high success and overcome any barriers. A popular suggestion was for the national PowerPlay network to facilitate collaboration and sharing between schools, convene intermittent national or regional remote meetings, and share best practices on their website.

- Several teachers recommended that when they initially became involved with PYE, they would benefit from a half-day live professional development session with national or regional PowerPlay leaders.

- Teachers in general feel less prepared to lead "advanced" PYE offerings that go beyond the core "Business Planning Kit" curriculum for students who continue the program in higher grades. With this project, the PowerPlay charity worked with Teacher Ambassadors to create clubs and events that integrated technology and industry tools with broader, more complex product creation and sales. Teachers at less mature programs would welcome ideas and professional development on diversifying and extending the curriculum.

Perceived PYE Benefits

Throughout this report, we have presented perceptions of program benefits for students, as voiced by students, teachers, administrators, and community stakeholders. Many positive impacts were identified, including personal and unique experiences of the informants. Below we present what emerged as the strongest, most corroborated themes.

- Involving students in highly engaging interesting, real-world experiential learning
- Increasing students':
  - Interest in learning
  - Self-confidence
  - Communication skills
  - SEL skills

  - School attendance
  - Problem-solving ability
  - Perseverance
  - Awareness of postsecondary and career opportunities for them

- Connecting students to local businesses, community leaders, and entrepreneurs

For schools and teachers, major benefits identified included:

- More engaged students
- Increased connection to the community
- Increased connections to parents (through the PYE activities and showcase events)

In this discussion section of the report, it is also relevant to highlight students' very positive responses on the survey, completed by 140 respondents across six schools:

- Approximately, 80% agreed that they enjoyed being in PowerPlay, that they would recommend PowerPlay to their friends, and that participating in PowerPlay could have a long-term impact on their future.
- Eighty-five percent "somewhat" or "very much" found that PowerPlay made learning more fun, while increasing their interest in learning new topics (76.2%).
- Close to three-fourths found that PowerPlay increased their ability to overcome problems.
- Notably, in extending the influences of PYE outside the program, over two-thirds (68.3%) reported an increase in their confidence as student learners.

The most frequent open-ended survey responses described benefits of PowerPlay in the areas of education, entrepreneurship/business, fun learning, creative skills, friendships, and future job prospects.

Perceived Barriers/Challenges

Relative to their reactions about program benefits, teachers and students identified much fewer concerns or perceived barriers to achieving PYE and YPL goals. Schools are busy places, and their schedules are often disrupted or curtailed by weather closures or other unforeseen events (such as the COVID-19 pandemic). Therefore, it is not surprising that, for teachers and club leaders, the primary challenge was completing the program activities and having students ready to showcase their products, within the time periods they allotted to complete the six modules. Some teachers and administrators also expressed concerns about possible inequities created between

students whose families could loan them money or provide special materials for making products and those from low-income homes. For administrators, as likely would be expected for any supplementary program, the biggest challenge was selecting and scheduling PYE classes given ever-changing staff and enrollments each year. In the extended learning programs at northern schools, a barrier for some students was being unable to stay after school due to lack of transportation or family obligations.

Students in general expressed minor, often idiosyncratic concerns about PYE. The most common (but still a small percentage of responses) was that the program can be fairly challenging. Different reasons were given. Some students found it difficult to identify and make their product in the time allotted by their teachers. Others experienced anxiety about public speaking, while a small number indicated struggling with the math required to compute pricing and sales projections. Some mentioned difficulty with the reading levels of the program materials. Our overall conclusion is that these concerns reflected fairly natural reactions by diverse students having different strengths, weaknesses, likes, and dislikes. No major intrinsic weaknesses of either the in-school or after-school offerings emerged, other than perhaps stronger time pressures imposed at some sites.

Conclusions and Recommendations

Drawing from all findings in this study, our primary conclusion is that PowerPlay Young Entrepreneurs is a popular supplementary school program that appears to be achieving its major educational objectives in both in-school or extended learning contexts. All participant and stakeholder groups—students, teachers, school administrators, and community stakeholders—expressed very positive perceptions of the program's design, activities, and most importantly, impacts on students. Given our "third-party" relationship to PowerPlay, and the anonymity of the student survey responses, opportunities clearly were present for the many study participants to express criticisms or disappointments, but such reactions were scarce and more personal than endemic in nature. Relative to other school programs, PYE seems to be fairly inexpensive to adopt and easy to implement with regard to teacher preparation and resources. It is particularly well suited to middle school curricula and students, although we and several teachers and administrators saw definite potential for age-appropriate extensions to upper elementary grades and high school. Importantly, the vast majority of students enjoy the PYE class/YPL club time, while also feeling that they are benefiting educationally, personally, and socially. PowerPlay is applicable and available to students from all socioeconomic levels. In parts of New Brunswick, its adoption has been prioritized for lower-income, geographically isolated communities where students normally would have limited exposure to real-world entrepreneurial ventures, projects, and mentoring. Community leaders and stakeholders likewise viewed the program as furthering community-school connections, thereby potentially revitalizing both.

In separate sections of this report, we have provided recommendations in association with particular respondent groups or topics. Below are those that we believe to be the most strongly supported by our findings and relevant considerations for continuous program development:

- Expand and continuously update the PowerPlay website to facilitate networking and sharing of best practices between PYE schools and YPL clubs.
- Convene remote meetings at least yearly to provide PowerPlay schools with new information on program resources and strategies and promote a national community of practice.
- Increase guidance to schools on:
  - Ways of adapting implementation schedules and structures (determining program duration, length and number of classes, use of mixed versus separate grade levels) to best fit local resources and needs.
  - How to implement PYE most effectively in French immersion classes, where special materials and added time may be needed.
  - Strategies for connecting with local businesses and community entrepreneurs who can serve as models and mentors.
  - Diversifying program activities for students who participate for multiple semesters or years.
  - How to manage PYE loans to students for purchasing materials so that inequities between those from higher- and lower-income homes are minimized or eliminated.
  - For YPL clubs that have groups make and sell products, offer suggestions to manage the money collected from product sales to ensure security, accountability, and fairness in charitable, school, and/or student payments.

In conclusion, the present research study provides informative qualitative perspectives on PYE's uses and benefits in both in-school and extended learning contexts. Based on stakeholder feedback, PowerPlay programming appears to engage students in ways that builds their confidence, connects them to their schools and communities, and develops their planning and project management skills. There is also suggestive evidence that for many students, PowerPlay improves self-efficacy and school attendance. Such impacts, in turn, should positively influence academic achievement over time. Further research, using intervention-control group comparisons, is recommended to explore and document these potential impacts quantitatively.

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Appendix A: Data Collection Instruments

Evaluation of the PowerPlay Young Entrepreneurs Program

Student Survey

Welcome to the PowerPlay program student survey. This survey asks about YOUR experiences participating in the PowerPlay Young Entrepreneurs and their after-school programs and events. There is no right or wrong answer to any question. Please answer the questions in this survey as accurately and honestly as you can. Give the best answer for you, even if it is hard to make up your mind. You do not have to take this survey if you do not want to, and you can stop at any time. Your answers will be used to help make the PowerPlay programs better.

It should take about 5-10 minutes to complete this survey.

Q.1 What school do you attend?

- O Blackville School, Blackville
- O Gretna Green School, Miramichi
- O Max Aitken Academy, Miramichi
- O Port Elgin School, Port Elgin
- O St. John the Baptist/King Edward School, Saint John
- O Princess Elizabeth School, Saint John
- O Elsipogtog School, Elsipogtog First Nation
- O Queen Elizabeth School, Moncton

Q.2 What grade are you in?

- O 4th
- O 5th
- O 6th
- O 7th
- O 8th

Q.3 How have you participated in PowerPlay? (Check all that apply.)

- ☐ During school
- ☐ After-school
- ☐ PowerPlay Events (ex: Sessions with Sawyer Hannay & Savvy Simon)
- ☐ Other (please describe below)

_____

Q.4 What do you think of the PowerPlay after-school programs and/or events?

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I enjoy being in PowerPlay	O	O	O	O	O
I would recommend PowerPlay to my friends	O	O	O	O	O
What I am learning in PowerPlay should help me in the future	O	O	O	O	O

Q.5 How do the PowerPlay after-school programs and/or events...

	Not at all	Just a little	Somewhat	Very much
Make learning more fun?	O	O	O	O
Make you more confident as a student?	O	O	O	O
Increase your interest in learning new topics?	O	O	O	O
Increase your ability to overcome things that go wrong?	O	O	O	O
Help you form stronger relationships with peers who have similar interests?	O	O	O	O
Make you feel more connected to others in your school or community?	O	O	O	O
Help you think about future education interests?	O	O	O	O
Help you think about future job interests?	O	O	O	O

Open-ended comments

Q.6 How do the PowerPlay after-school programs and/or events help you most?

Q.7 What parts of the PowerPlay after-school programs and/or events do you like the ***most***?

Q.8 What parts do you like the ***least***?

Q.9 How could the PowerPlay after-school programs and/or events be made better for students like you in the future?

Teacher Interview

Hello. My name is _____. PowerPlay Young Entrepreneurs has asked Johns Hopkins University to conduct a study of the PowerPlay afterschool program. The purposes are to describe how the program is implemented at different sites, the nature of student participation, and the perceived success of different activities. The ultimate goal is to help PowerPlay Young Entrepreneurs nationally provide the most effective program experiences possible for their student participants.

Your participation is voluntary, you don't have to answer any question you don't want to. Please answer the questions honestly so that we can obtain accurate information about the PowerPlay program in your site. Your responses will be completely confidential and reported in a way that does not identify you or your site. Do you have any questions before we begin?

***Descriptive data**: Identify school/Province; After-school, in-school, both?*

- What is your formal position with PowerPlay: regular classroom teacher? PowerPlay teacher?

- How long have you been involved with the afterschool program?

- How many years has your school participated in the PowerPlay afterschool program?
  ___Don't know
  ___ This is the first year
  ___ 2 years
  ___ 3 years
  ___ more than 3 years

- How would you best describe the PowerPlay "activities" provided to students in your school/community?

  ___ After-school only
  ___ During school
  ___A combination of after-school and in-school
  ___ Other, (please describe below)

Please react to the afterschool PowerPlay program:

- What does a typical session entail?
- What activities were particularly effective?

- Describe whether and how PowerPlay is beneficial for students who participate in it:
  [prompt for self-confidence, engagement, homework completion, academic performance, interest in the future, social behaviors towards other students, connection to classroom and school community]

- How does the PowerPlay afterschool program increase your ability to support students having different academic abilities?

- What parts do you like best? Least? Explain why.

- What are your recommendations for program improvement?

Appendix B: Descriptive Questionnaire Results

Table A1
Item-Level Descriptive Statistics, Student Engagement Items

Use the scale below to indicate the degree to which you agree or disagree with each statement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N	*M*	*SD*
I enjoy being in PowerPlay.	3.6%	4.3%	10.7%	40.0%	41.4%	140	4.1	1.0
I would recommend PowerPlay to my friends.	3.6%	5.7%	14.3%	38.6%	37.9%	140	4.0	1.0
What I am learning in PowerPlay should help me in the future.	0.7%	2.9%	15.7%	45.0%	35.7%	140	4.1	0.8

Table A2
Item-Level Descriptive Statistics, Student Perception Items

Use the scale below to indicate the degree to which you agree or disagree with each statement.

	Not at all	Just a little	Somewhat	Very much	N	*M*	*SD*
PowerPlay makes learning more fun.	2.9%	12.1%	37.1%	47.9%	140	3.3	0.8
PowerPlay increased my interest in learning new topics.	5.8%	18.0%	33.1%	43.2%	139	3.1	0.9
PowerPlay increased my ability to overcome things that go wrong.	10.0%	18.6%	40.7%	30.7%	140	2.9	0.9
PowerPlay makes me more confident as a student.	11.5%	20.1%	38.1%	30.2%	139	2.9	0.9

Table A3
Item-Level Descriptive Statistics, Student Benefit Items

Use the scale below to indicate the degree to which you agree or disagree with each statement.

	Not at all	Just a little	Somewhat	Very much	N	*M*	*SD*
PowerPlay helps me think about future job interests.	7.1%	16.4%	36.4%	40.0%	140	3.1	0.9
PowerPlay helps me think about future education interests.	6.4%	16.4%	37.9%	39.3%	140	3.1	0.9
PowerPlay makes me feel more connected to my school/community.	12.1%	20.7%	35.7%	31.4%	140	2.9	0.9
PowerPlay helps me form relationships with peers with similar interests.	10.8%	17.3%	41.0%	30.9%	139	2.9	0.9