LEGO EDUCATION SOLUTIONS

IMPACT REPORT

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First Book

LEGO education

The LEGO Foundation

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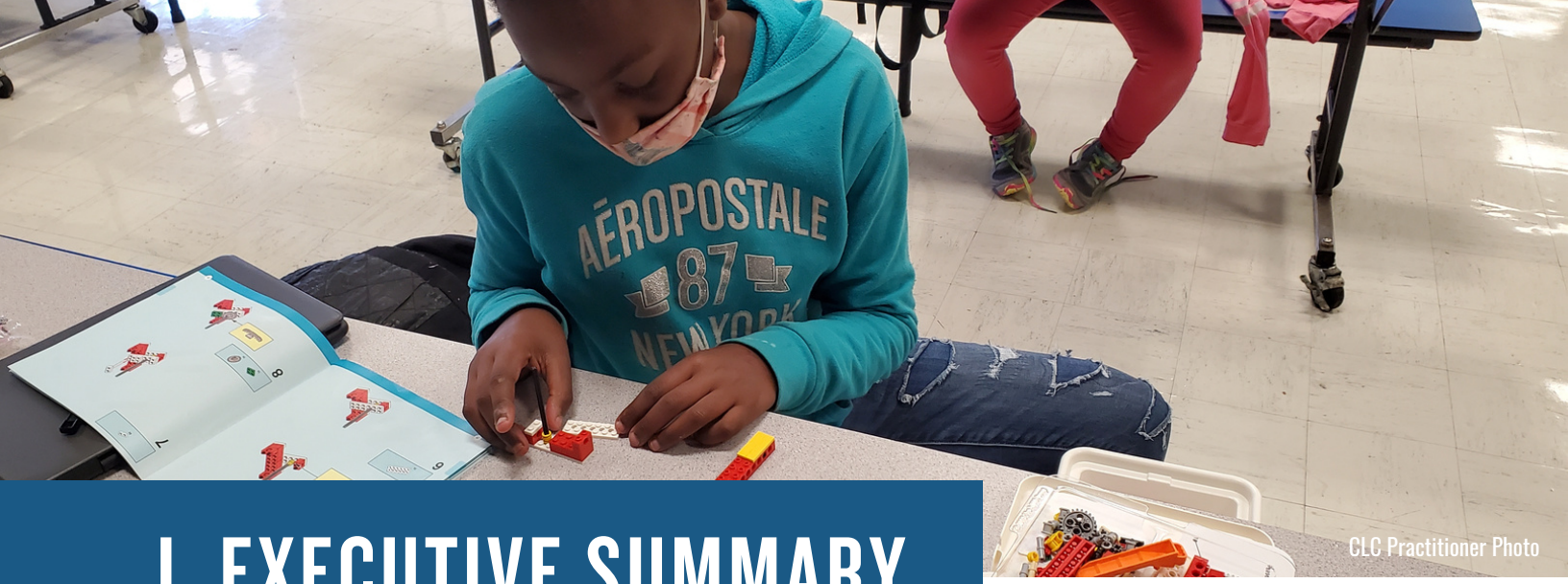

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I. EXECUTIVE SUMMARY

To address the issues of the digital divide intensified by the COVID-19 pandemic, CDW, Intel Corporation, and LEGO® Education and the LEGO Foundation worked with First Book to build the Creating Learning Connections initiative (CLC). This initiative provided learning solutions designed to fuel education by supporting thousands of students and families in Title I schools in the United States impacted by the pandemic. Students received critical at-home and in-classroom learning resources, including internet connectivity, devices, and hands-on STEAM learning solutions—namely, LEGO Education Solutions.

The LEGO Education team engaged First Book Research & Insights to conduct a multiphase evaluation of the impact of LEGO Education Solutions on communities in need, as a result of the CLC initiative. This evaluation included focus groups, logic model design, literature reviews, and pre- and post-survey administration. This research not only illustrates the impact of LEGO Education Solutions on communities in need, but it also serves as a baseline for LEGO Education's impact measurement approach and demonstrates the product's value proposition.

Findings

The table below outlines exceptionally noteworthy, high-level findings where we observed the greatest consensus around and strongest relationships between LEGO Education Solutions use and key outcomes. The findings are promising and can be used to inspire greater use of and further research on LEGO Education Solutions.

#1 Administrator & practitioner experiences with LEGO Education Solutions generated enthusiasm for increasing STEM integration in their curriculum.

#2 The more involved administrators were in helping their practitioners use the LEGO Education Solutions, the greater their job satisfaction and the less burned-out they felt.

#3 Practitioners reported increases in students' self-efficacy over time.

#4 Practitioners reported increases in students' ability to engage in collaboration.

#5 Practitioners reported increases in students' creativity & curiosity over time.

#6 Administrators' experience with LEGO Education Solutions helped them to feel hopeful about their ability to advance educational equity and more confident in their ability to serve practitioners in their district.

#7 LEGO Education Solutions helped administrators to feel that they were in a better position to achieve their academic standards and gave them the opportunity to provide high-quality educational experiences on par with high-income districts.

II. INTRODUCTION

The closure of schools in March of 2020 exacerbated an existing crisis in education for children in poverty, millions of whom did not have access to enable virtual learning. In July of 2020, First Book released the results of a nationwide survey of educators that showed 40% of children in need in the U.S. did not have reliable internet, and almost 40% were without access to functioning devices. These children were isolated without educational support and were falling further behind.

To address the issues of the digital divide intensified by the COVID-19 pandemic, CDW, Intel Corporation, and LEGO® Education and the LEGO Foundation worked with First Book to build the Creating Learning Connections initiative (CLC). This initiative provided learning solutions designed to fuel education by supporting several thousand students and families in Title I schools in the U.S. impacted by the pandemic. Students received critical at-home and in-classroom learning resources, including internet connectivity, technology devices, and hands-on STEAM learning solutions.

Through this initiative, Intel and CDW provided a total of $5 million in personal computers, software, configuration services, and digital learning resources as well as stipends of $4,000 to each awarded district to address home internet connectivity for kids in need. The LEGO Foundation donated $2 million worth of LEGO Education solutions to support STEAM learning at home and in school. Districts were invited to choose from three age-appropriate solutions to support STEAM learning for grades 2-8: LEGO Education SPIKE Prime, LEGO Education Simple Machines, and LEGO Education Simple & Powered Machines. As part of the grant, underserved families in 17 states received support, with 7,500 LEGO Education Solutions delivered to 40 school districts.

III. EVALUATION OVERVIEW

The CLC initiative provided an opportunity for the LEGO Education team to evaluate the impact of LEGO Education Solutions on communities in need. Not only does this research inform ongoing conversations about LEGO Education's impact measurement approach, but it also demonstrates the products' value to other districts, likely expanding the reach of LEGO Education to many more students deserving of the benefits of STEAM learning.

The teams followed a multiphase evaluation process:

1. An educator's perspective is the most powerful tool we have to improve the lives of students, and more broadly, the state of education in America. As such, listening was the first step in our research process. We started by gathering feedback from CLC–awarded practitioners, who planned to use the product, and the administrators who support them. Specifically, practitioners and administrators joined focus groups to share their thoughts on the anticipated value and impact of these donations on students and their own workplace experiences. These insights served as the foundation for our second step: building a logic model.

2. A logic model illustrates the relationship between activity, intervention, or program and its intended outcomes. It requires systematic thinking—forcing its designer to name assumptions underlying program mechanisms and very clearly describe why an activity is likely to produce a particular outcome.[1] It creates focus and shared understanding because activities and their related outcomes are specified for all stakeholders to see. It is best considered a "living draft," as team members should continuously test their programmatic logic and make revisions as they learn.

1. WK Kellogg Foundation. (2004). WK Kellogg Foundation logic model development guide. WK Kellogg Foundation.

The LEGO Education team recognized the value of this process and committed to creating a logic model to guide its LEGO Education Solutions' impact measurement approach. First Book conducted a two-hour meeting with the LEGO Education team to develop a draft. With the expertise of the LEGO Education team and the "on-the-ground" insights from practitioners and administrators, we developed sound hypotheses about the impact of LEGO Education Solutions—clearly linking the influence of the product and anticipated outcomes.

3 After finalizing the logic model, First Book conducted multiple literature searches to identify validated scales published in peer-reviewed journals. These scales were used to measure the outcomes included in the logic model. These measures were added to our surveys and programmed into Qualtrics, an online survey platform, to later administer to practitioners and administrators.

IV. PHASE 1: FOCUS GROUPS

An educator's perspective is the most powerful tool we have to improve the lives of students, and more broadly, the state of education in America. As such, listening was the first step in our research process. We started by gathering feedback from CLC–awarded practitioners, who planned to use the product, and the administrators who support them. Please see below for focus group details.

Instrument Development. We developed a protocol to understand the anticipated impact LEGO Education Solutions could have on the practitioners' and administrators' students and their workplace experiences. Please see Appendix C for the discussion guide.

Recruitment & Administration. On October 30, we held two virtual focus groups with administrators and practitioners participating in the CLC initiative. The focus group was moderated by OneSpark.

Sample & Analysis. Our first focus group was comprised of five practitioners and our second group was comprised of five administrators and STEM coordinators. All focus group participants were from one of 40 districts selected to receive LEGO Education Solutions with a focus on those receiving SPIKE PRIME 5-8 grade. Focus group responses were analyzed for key themes. These themes informed the design and content of the logic model.

Results & Findings. The focus groups surfaced the high-level themes included below. Detailed findings can be found in Appendix D.

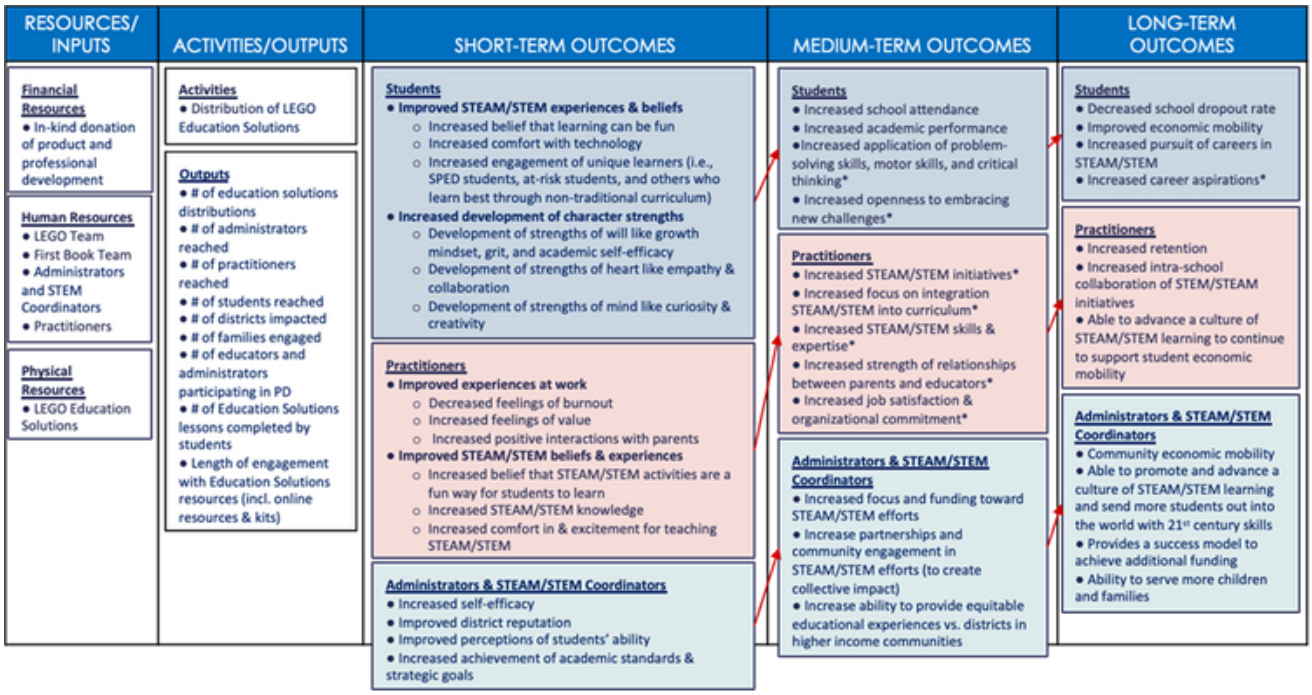
1. Providing access to STEAM/STEM resources and tools was important to all participants as this provided students a learning opportunity they might not otherwise get.
2. Important for several participants was a desire to shift the mindsets of students, other educators, and families that students can learn through play.
3. Providing students the opportunity to grow their confidence, self-worth, and understanding of math, engineering, and coding through LEGO Education Solutions was desired by all participants.
4. To lose out on this opportunity was considered a deep and disappointing loss by both participant segments.

V. PHASE II: LOGIC MODEL DEVELOPMENT

A logic model illustrates the relationship between activity, intervention, or program and its intended outcomes. It requires systematic thinking—forcing its designer to name assumptions underlying program mechanisms and very clearly describe why an activity is likely to produce a particular outcome. It creates focus and shared understanding because activities and their related outcomes are specified for all stakeholders to see. It is best considered a "living draft," as team members should continuously test their programmatic logic and make revisions as they learn.

Understanding the value of the clear thinking that logic models bring about, the LEGO Education teams decided to develop a logic model for LEGO Education Solutions. First Book conducted a two-hour meeting with the LEGO Education team to develop a draft. With the expertise of the LEGO Education team and the "on-the-ground" insights from practitioners and administrators, we developed sound hypotheses about the impact of LEGO Education Solutions—clearly linking the influence of the product and anticipated outcomes. To sum up our evaluation in a question, our teams continually asked and tested:

How did this donation of LEGO Education Solutions impact the administrators, practitioners, and students who received them? This question is aligned with the short-term and medium-term outcomes detailed in the logic model (below).



VI. PHASE III: SURVEYS

After finalizing the logic model, First Book conducted multiple literature searches to identify validated scales published in peer-reviewed journals. These scales mapped onto the outcomes outlined in the logic model and were used to measure impact. They were included in the surveys administered to practitioners and administrators. Details on our survey development process, administration, and samples are included below.

Instrument Development. The First Book team developed pre- and post-surveys to administer to administrators and practitioners. The overall purpose was to gather information about the perceived impact of LEGO Education Solutions on their students' experiences and their workplace experiences. The team conducted multiple literature searches to identify validated scales to measure the outcomes outlined in the logic model. Survey instruments can be found in Appendix E.

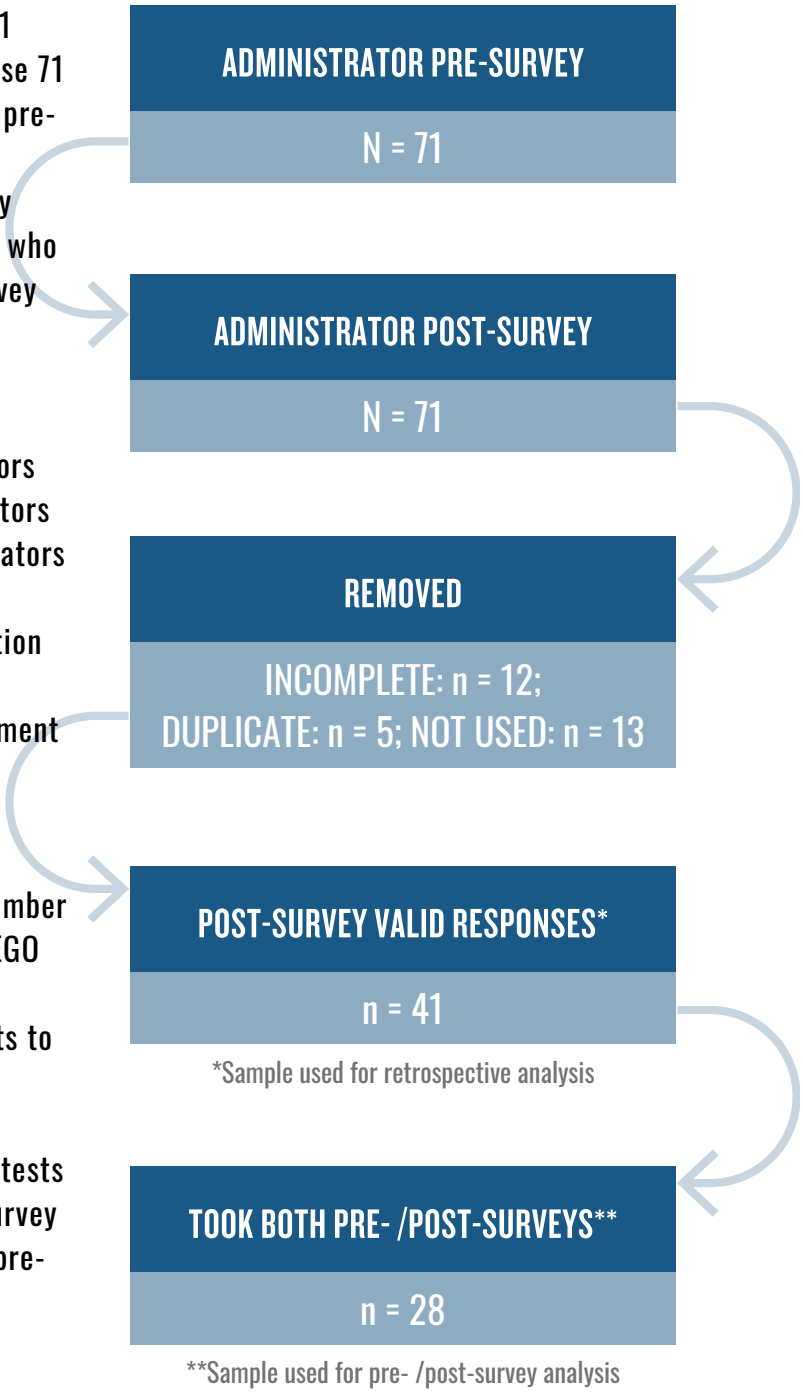
Recruitment & Administration. During the weeks of November 20 through January 4, the First Book team administered the online pre-survey to administrators and practitioners. During the weeks of March 18 through May 18, we administered the post-survey. We sent several reminders throughout the administration period. Practitioners who completed the pre-survey were offered a $125 incentive to complete the post-survey to maximize participation.

Administrator Sample & Analysis. A total of 71 administrators completed the post-survey. Of those 71 administrators, 28 administrators completed the pre- and post-survey. In our analysis of retrospective pretest data, we exclusively examined post-survey data. In other words, we included all participants who completed the post-survey, regardless of pre-survey completion. For these analyses, the sample size increases to N = 41.

Most participants were district-level administrators (46 percent), followed by school-level administrators (32 percent), and "other" (21 percent). Administrators felt very (33 percent) or moderately (33 percent) involved in helping practitioners use LEGO Education Solutions. Less than a fifth of administrators (17 percent) participated in the professional development offered; however, 43 percent of administrators believed others on their team did attend.

Administrators were asked to approximate the number of students across their districts who received LEGO Education Solutions. An average of 440 students received kits, with a wide range from two students to 2,800 students.

The First Book team conducted paired-samples t-tests and simple linear regressions on pre- and post-survey data. In the team's analysis of the retrospective pre-test data, they calculated summary statistics.



Practitioner Sample & Analysis. A total of 77 practitioners completed the pre-survey. Of those 77 practitioners, 21 also completed the post-survey, yielding a response rate of 15 percent for all pre- and post-analyses. In our analysis of retrospective pre-test data, we exclusively examined post-survey data. In other words, we included all participants who completed the post-survey, regardless of pre-survey completion. For these analyses, the sample size increases to N = 31.

More than half of practitioners kept the kits to use in their classroom (55 percent), almost a third sent them home for use during virtual learning (29 percent), and some opted to do both (16 percent). Most practitioners used the kits with elementary school students (71 percent) while the rest used them with middle school students (29 percent).

More than a third of the sample participated in the professional development offered (36 percent). Most practitioners felt very (55 percent) or moderately (36 percent) involved in helping their students use LEGO Education Solutions. Practitioners varied in the frequency at which they incorporated LEGO Education Solutions in their curriculum and/or assignments. Approximately a third of practitioners used them multiple times per week (32 percent), followed by once a week (26 percent), multiple times a month (16 percent), and once a month (19 percent).

PRACTITIONER PRE-SURVEY

N = 79

REMOVED: INCOMPLETE

n = 2

PRACTITIONER POST-SURVEY

N = 31

TOOK BOTH PRE- /POST-SURVEYS

n = 21

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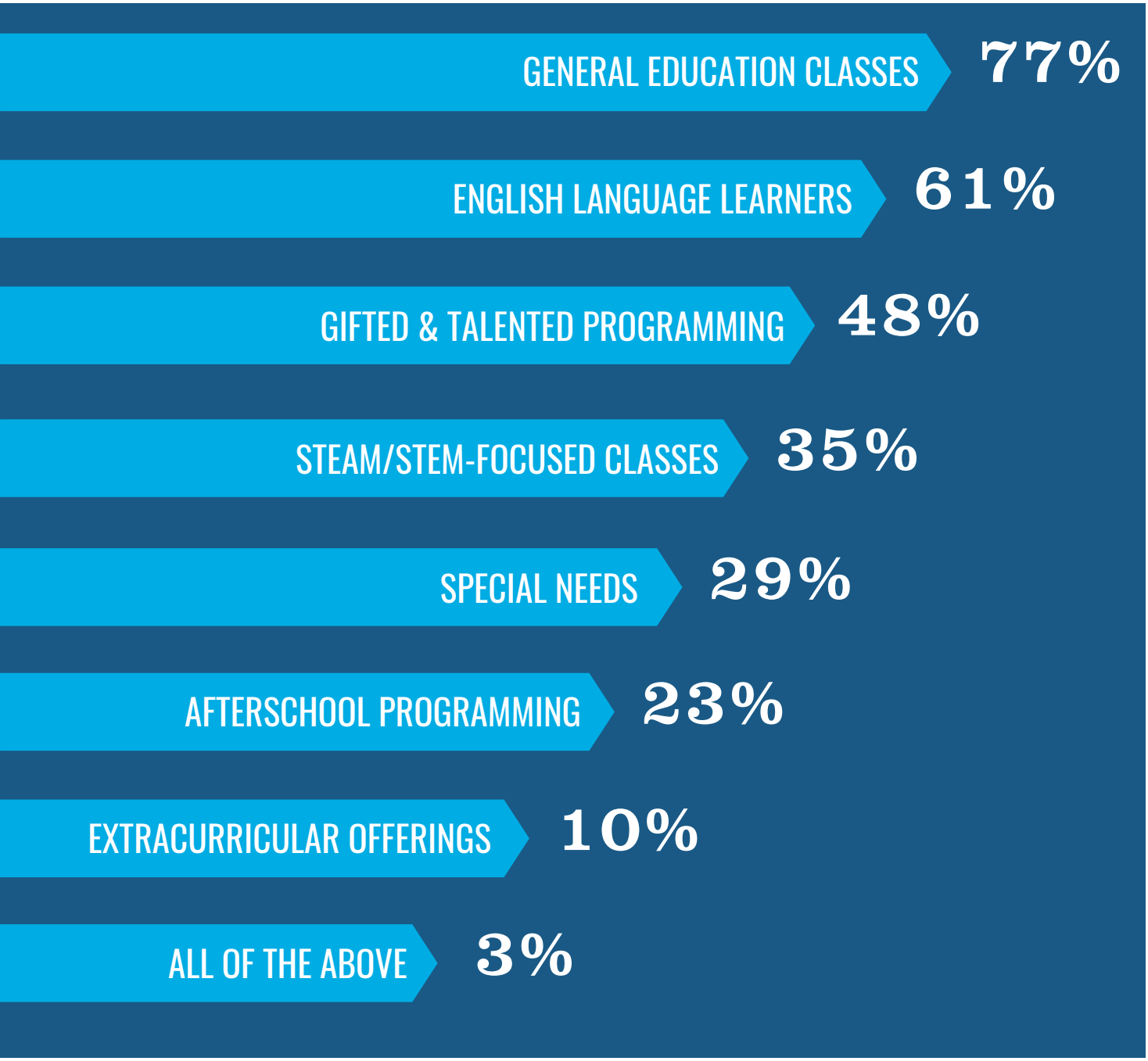
Students Using LEGO Education Solutions



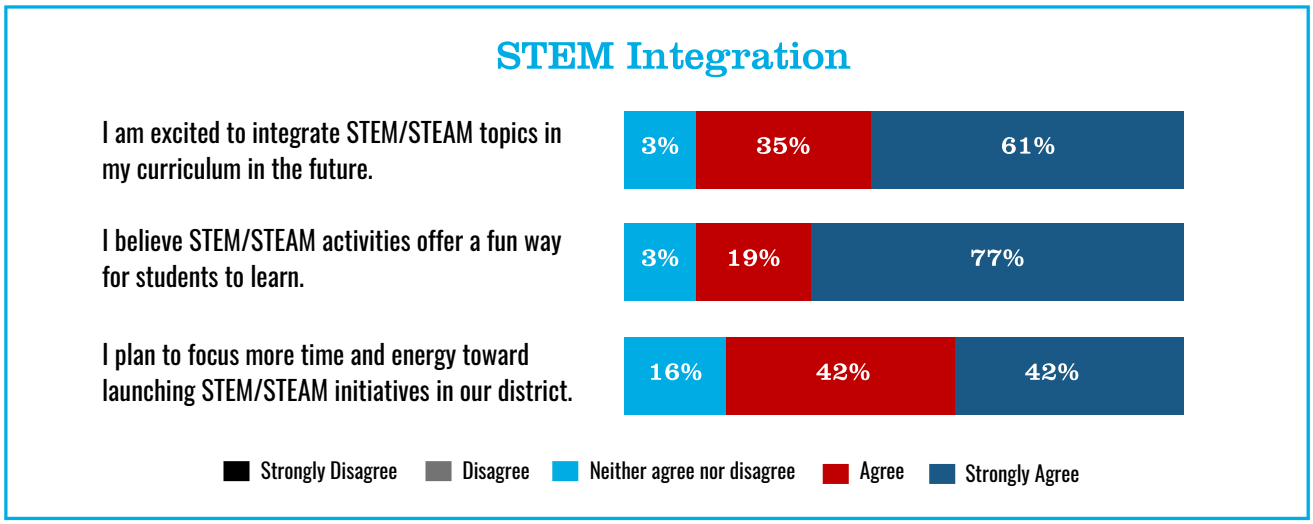
The First Book team conducted paired-samples t-tests and simple linear regressions on pre- and post-survey data. In the team's analysis of the retrospective pre-test data, they calculated summary statistics.

VII. KEY FINDINGS

This evaluation assessed the impact of LEGO Education Solutions on short-term and medium-term outcomes. Please see the logic model in the "Evaluation Overview" section for more detail.

Finding #1: Administrator & practitioner experiences with LEGO Education Solutions generated enthusiasm for increasing STEM integration in their curriculum. Almost all practitioners are excited about and plan to integrate STEM/STEAM into their curriculum to a greater degree than before they received their donation (96 percent and 93 percent, respectively). Similarly, administrators indicated that they plan to focus more time and energy toward launching STEM/STEAM initiatives (84 percent). These intentions have powerful implications, as STEM education can increase opportunity for students from economically disadvantaged backgrounds.[2]

As early as the elementary and preschool years, socioeconomic disparities in science and math achievement are evident.[3] These gaps often precede poor performance in high school STEM courses and decreased likelihood of advanced education and securing a well-paid STEM career. To offset these outcomes, children need exposure to STEM opportunities early in their education.[4,5] This exposure supports children's academic performance, develops critical thinking and reasoning skills, and predicts later interest in STEM study and careers.[6]

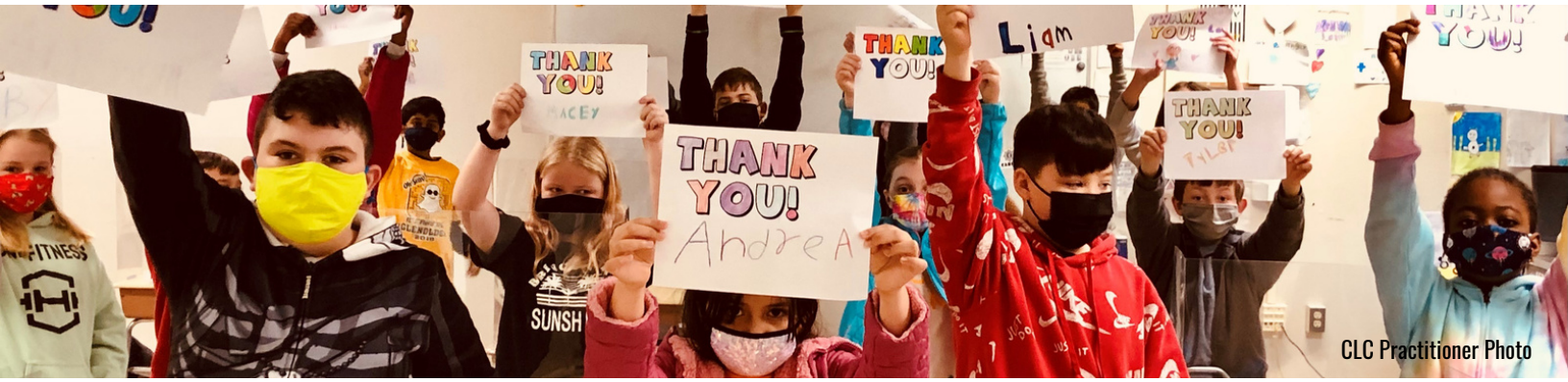


2. Rozek, C. S., Ramirez, G., Fine, R. D., & Beilock, S. L. (2019). Reducing socioeconomic disparities in the STEM pipeline through student emotion regulation. Proceedings of the National Academy of Sciences, 116(5), 1553-1558.
3. Betancur, L., Votruba-Drzal, E., & Schunn, C. (2018). Socioeconomic gaps in science achievement. International Journal of STEM Education, 5(1), 1-25.
4. Bagiati, A., Yoon, S. Y., Evangelou, D., & Ngambeki, I. (2010). Engineering curricula in early education: Describing the landscape of open resources. Early Childhood Research & Practice, 12(2)
5.Bøe, M. V., Henriksen, E. K., Lyons, T., & Schreiner, C. (2011). Participation in science and technology: young people's achievement- related choices in late- modern societies. Studies in Science Education, 47(1), 37-72.
6.National Research Council. (2011). Successful K–12 STEM education: Identifying effective approaches in science, technology, engineering, and mathematics. Committee on Highly Successful Science Program for K–12 Science Education. Board on Science Education and Board on Testing and Assessment, Division of Behavioral and Social Sciences and Education. Washington DC: The National Academies Press.

Finding #2: The more involved administrators were in helping their practitioners use LEGO Education Solutions, the greater their job satisfaction and the less burned-out they felt. Attrition in the field of education is disturbingly high. Approximately 18 percent of principals and 25 percent of teachers turnover each year.[7,8] Children bear the consequences of this revolving door, as turnover has been found to suppress academic achievement.[9] It is imperative that we create conditions that bolster job satisfaction and decrease stressors that cause burnout, as they are predictive of retention. While we cannot infer causality, results revealed that the more involved administrators were with their practitioners' use of LEGO Education Solutions, the greater their job satisfaction and lesser their feelings of burnout.[10]

Finding #3: Practitioners reported increases in students' self-efficacy over time. We observed statistically significant increases in students' self-efficacy over the time in which students used LEGO Education Solutions.[11] Previous research has demonstrated that one's perceived ability for learning—self-efficacy—has a direct effect on engagement in school, academic achievement, and occupational pursuits.[7] Further, it influences a host of psychological processes that can significantly alter the course of one's life. This list includes analytic thinking skills, perseverance in response to setbacks, and susceptibility to stress and depression.[7] Given the predictive power of self-efficacy, it is critical that students continue to gain access to and engage in activities that promote this ability, especially within high-poverty schools where focus on its development is less prevalent.[8]

90% of practitioners said that LEGO Education Solutions helped their students to see themselves as learners to a moderate or large extent.



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7. Redding, C., & Henry, G. T. (2018). New evidence on the frequency of teacher turnover: Accounting for within-year turnover. Educational Researcher, 47(9), 577-593.
8. Snodgrass Rangel, V. (2018). A review of the literature on principal turnover. Review of Educational Research, 88(1), 87-124.
9. Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. American Educational Research Journal, 50(1), 4-36.
10. A simple linear regression was carried out to test if the level of involvement significantly predicted job satisfaction. The results of the regression indicated that the model explained 61.9% of the variance and that the model was significant, $F(2, 25)=8.65$, $p = .03$).
A simple linear regression was carried out to test if the level of involvement significantly predicted burnout. The results of the regression indicated that the model explained 40.9% of the variance and that the model was significant, $F(2, 25)=22.91$, $p = .025$).
11. A paired samples t-test found the statistically significant differences between pre- ($M= 2.14$, $SD= .38$) and post-survey measures of collaboration ($M= 2.43$, $SD= .43$), $t(20) = 3.28$, $p = .004$., $d = 0.71$.

Finding #4: Practitioners reported increases in students' ability to engage in collaboration. Our findings showed statistically significant increases in students' ability to collaborate with others.[12] Collaborative learning is associated with a wealth of positive outcomes—higher academic achievement, creative problem-solving, more willingness to take on difficult tasks, and transfer of learning from one situation to another.[13] It also promotes positive interpersonal relationships, greater social support, and psychological health.[13] Put simply, the value of collaboration cannot be overstated.

Finding #5: Practitioners reported increases in students' creativity & curiosity over time. To level the playing field for children in need, it is critical that we provide access to experiences that foster traits like curiosity and creativity.[14] Years of research demonstrate curiosity is a form of intrinsic motivation critical to active learning, and thus, argued to be integral to educational attainment.[15, 16, 17] Further, a recent study showed that curiosity is linked to academic achievement—the more curious children are, the better they perform in school. This relationship is even more pronounced for children who come from disadvantaged backgrounds, suggesting that curiosity could lessen differences in academic performance between students coming from lower-income homes and their more affluent peers.[18]

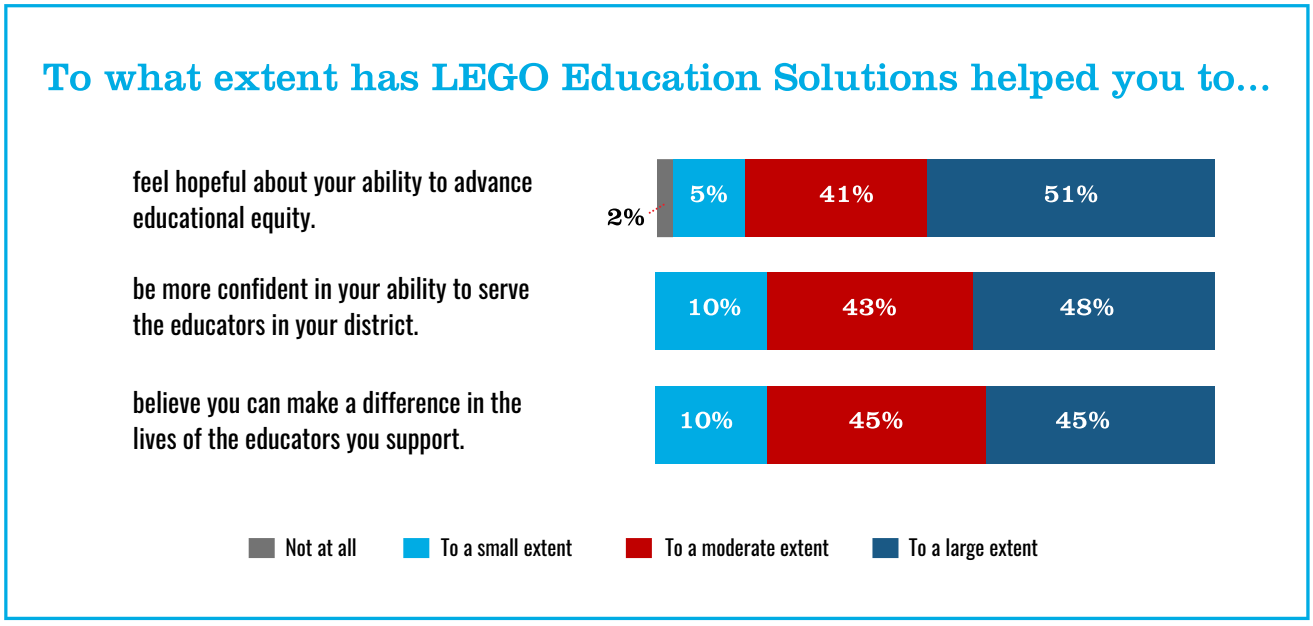
Like curiosity, creativity too is related to children's academic achievement[19] Numerous studies have demonstrated that individuals with greater means are more creative than those who were raised in low-socioeconomic households. Researchers often attribute this pattern to a lack of resources and diversity of experience (e.g., travel), which in turn limit the knowledge required to generate creative ideas.[20, 21, 22]

12. A paired samples t-test found the statistically significant differences between pre- (M= 3.67, SD= .45) and post-survey measures of collaboration (M= 3.94, SD= .46), t(20) = 2.33 , p = .03., d = 0.59.
13. Johnson, D. W., & Johnson, R. (1989). Cooperation and competition: Theory and research. Edina, MN: Interaction Book Company.
14. García, E., & Weiss, E. (2017). Reducing and Averting Achievement Gaps: Key Findings from the Report Education Inequalities at the School Starting Gate and Comprehensive Strategies to Mitigate Early Skills Gaps. Economic Policy Institute.
15. Oudeyer, P. Y., Gottlieb, J., & Lopes, M. (2016). Intrinsic motivation, curiosity, and learning: Theory and applications in educational technologies. Progress in Brain Research, 229, 257-284.
16. Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P., 2014. Active learning increases student performance in science, engineering, and mathematics. PNAS, 111(23), 8410–8415
17. Hassinger-Das, B., & Hirsh-Pasek, K. (2018). Appetite for knowledge: curiosity and children's academic achievement. Pediatric Research, 84(3).
18. Shah, P. E., Weeks, H. M., Richards, B., & Kaciroti, N. (2018). Early childhood curiosity and kindergarten reading and math academic achievement. Pediatric research, 84(3), 380-386.
19. Gajda, A., Karwowski, M., & Beghetto, R. A. (2017). Creativity and academic achievement: A meta-analysis. Journal of Educational Psychology, 109(2), 269.
20. Brooks-Gunn J., Duncan G. J. (1997). The effects of poverty on children. Future Child 7 55–71.
21. The environment of childhood poverty. Evans GW Am Psychol. 2004 Feb-Mar; 59(2):77-92.
22. Rietzschel E. F., Nijstad B. A., Stroebe W. (2007). Relative accessibility of domain knowledge and creativity: the effects of knowledge activation on the quantity and originality of generated ideas. J. Exp. Soc. Psychol. 43 933–946.

While LEGO Education Solutions cannot compensate for the absence of all resources, our results show that it is possible that they aid in the development of these important traits. Specifically, our results revealed statistically significant increases in students' curiosity and creativity over the period in which they used LEGO Education Solutions.[23]

Finding #6: Administrators' experience with LEGO Education Solutions helped them to feel hopeful about their ability to advance educational equity and more confident in their ability to serve practitioners in their district. Administrators with a strong sense of self-efficacy believe in their ability to create positive change and to motivate others to take charge within their schools.[24] They pursue their goals with tenacity and know when to adapt from a failing strategy to a more effective one.[25] Research has demonstrated that without self-efficacy, school administrators often neither pursue ambitious goals nor attempt to overcome barriers that stand in the way of reaching their objectives.[26]

Given the evidence, it is clear that strong administrator self-efficacy is needed to overcome the multiplicity of challenges facing under-resourced districts. Fortunately, throughout their donation experience, administrators indicated that they became more hopeful and confident in their abilities. Specifically, 91 percent of administrators said this donation experience has helped them to feel more confident in their ability to serve their practitioners to a large or moderate extent. Similarly, 92 percent of administrators feel hopeful about their abilities to advance educational equity.



23. A paired samples t-test found the statistically significant differences between pre- (M= 3.16, SD= .66) and post-survey measures of curiosity (M= 3.62, SD= .68), t(20) = 3.72, p < .001., d = .69. A paired samples t-test found the statistically significant differences between pre- (M= 3.31, SD= .50) and post-survey measures of creativity (M= 3.55, SD= .73), t(20) = 2.15, p = .001., d = .39.
24. Schunk, D. H. (2012). Learning theories: An educational perspective (6th ed.). Boston, MA: Pearson Education.
25. Osterman, K., & Sullivan, S. (1996). New principals in an urban bureaucracy: A sense of efficacy. Journal of School Leadership, 6(6), 661-690.
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Finding #7: LEGO Education Solutions helped administrators to feel that they were in a better position to achieve their academic standards and gave them the opportunity to provide high-quality educational experiences on par with high-income districts. Research has repeatedly demonstrated that students coming from economically disadvantaged families have lower levels of achievement compared to their classmates.[27] This has been the state of education in America for the past 50 years.[27] Indeed, systemic inequality of opportunity persists in our classrooms.

It is imperative that we provide schools that serve children in need with any resource that can bring disadvantaged students to equal footing with their peers. LEGO Education Solutions can be one of those tools. Almost all administrators said that LEGO Education Solutions helped them to provide high-quality educational experiences that are on par with high-income districts to a moderate or large extent (90 percent) and agreed that this donation put them in a better position to achieve their academic standards (86 percent).

VIII. LIMITATIONS

There are several limitations to the methods used in this study.

This study does not include a control group and cannot demonstrate causality. This study was a case study design, which is considered a pre-experimental design, which means we were not able to compare our sample with other practitioners or administrators who did not receive LEGO Education Solutions.[28] Without a control group, it is not possible to determine if the positive impacts observed in this study are caused by LEGO Education Solutions or if the changes were caused by other factors.

Other external factors may contribute to the reported positive impacts. It was impossible to control for all historical events that occurred prior to or during this evaluation. Survey participants were asked, "To what extent did LEGO Education Solutions have an impact on… ['x']?" There may have been other events that occurred in an administrator's or practitioner's life during the program period that may have contributed to reported impacts. In addition, participants experience maturation, which are processes that occur with the passage of time—independently of LEGO Education Solutions—which may affect reported increases in impacts.

27. Hanushek, E. A., Peterson, P. E., Talpey, L. M., & Woessmann, L. (2019). The achievement gap fails to close. Education Next, 19(3), 8-17.
28. Campbell, D. T., & Stanley, J. C. (1963). Experimental and quasi-experimental designs for research. Boston: Houghton Mifflin

The people who participated in the survey may not be representative of the overall population. These survey results are subject to non-response bias. The practitioners who chose to respond to this survey may be fundamentally different from those who did not respond and may be more likely to experience an increase in the outcomes measure, regardless of their experiences with LEGO Education Solutions.

Informant report questionnaires are not as accurate as self-report questionnaires. Practitioners were asked to provide informant reports of students' attitudes and behaviors. Informants will of course never have access to as much information as the "target"—in our case, the student—thus, limiting the accuracy of our information.[29]

Influence of COVID-19. This evaluation was conducted during the COVID-19 pandemic. The pandemic disrupted school schedules and delayed donation delivery, which limited some students' ability to use LEGO Education Solutions. The post-survey was administered when many schools began to execute reopening or hybrid plans, focusing practitioners' and administrators' attention on successful in-person return and possibly reducing attention on any activities that could have been considered ancillary. It is possible that these occurrences influenced survey response rates.

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29. Paulhus, D. L., & Vazire, S. (2007). The self-report method. In R. W. Robins, R.C. Fraley & R.F. Krueger (Eds.), Handbook of research methods in personality psychology (pp. 224-239). London: The Guilford Press.

IX. APPENDIX A

Retrospective Pretest Summary Statistics

ADMINISTRATORS

INDICATOR	STATEMENT	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	AGREE + STRONGLY AGREE
STEM focus	I plan to focus more time and energy toward launching STEM/STEAM initiatives in our district.	0%	0%	16%	42%	42%	84%
STEM focus	I plan to find additional financial resources to launch STEM/STEAM initiatives in our district.	0%	0%	21%	34%	45%	79%
Achievement of academic standards & strategic goals	Our district is in a better position to achieve our academic standards.	0%	5%	10%	54%	32%	86%
Achievement of academic standards & strategic goals	Our district is in a better position to achieve our strategic planning goals.	0%	2%	20%	44%	34%	78%
Student ability	I am even more confident in my students' abilities to reach their full learning potential.	0%	3%	18%	40%	40%	80%
Student ability	I believe my students can handle more challenging tasks now than they could before.	0%	3%	23%	33%	43%	76%
STEM focus	I plan to focus more time and energy toward launching STEM/STEAM initiatives in our district.	0%	0%	16%	42%	42%	84%

INDICATOR	STATEMENT: To what extent has this gift of LEGO Education Solutions helped you to...	NOT AT ALL	TO A SMALL EXTENT	TO A MODERATE EXTENT	TO A LARGE EXTENT	MODERATE + LARGE
Organizational commitment	Share the work they're doing with others.	0%	7%	37%	56%	93%
Ability to provide equitable educational experiences vs. districts in higher income communities	Feel hopeful about their ability to advance educational equity.	2%	5%	41%	51%	92%
Self-Efficacy	Be more confident in their ability to serve the educators in their district.	0%	10%	43%	48%	91%
Ability to provide equitable educational experiences vs. districts in higher income communities	Provide high quality educational experiences that are on par with high-income districts.	0%	10%	39%	51%	90%
Self-Efficacy	Believe they can make a significant difference in the lives of the educators they support.	0%	10%	45%	45%	90%
Organizational commitment	Feel proud of their district.	2%	10%	22%	66%	88%
Organizational commitment	Feel more committed to their district's mission.	2%	12%	37%	49%	86%
Self-Efficacy	Feel hopeful about the difference their district can make for the children they serve.	0%	20%	34%	46%	80%
Burnout	Feel more supported by their administration.	0%	27%	36%	36%	72%
Reputation	Raise awareness of the need in their community.	5%	29%	42%	24%	66%
Burnout	Feel more energized at work.	8%	28%	36%	28%	64%

INDICATOR	STATEMENT: To what extent has this gift of LEGO Education Solutions helped you to...	NOT AT ALL	TO A SMALL EXTENT	TO A MODERATE EXTENT	TO A LARGE EXTENT	MODERATE + LARGE
Partnerships/ community engagement in STEAM/STEM efforts	Develop new partnerships to launch additional STEM/STEAM programming.	13%	26%	31%	31%	62%
Partnerships/ community engagement in STEAM/STEM efforts	Secure additional funding for STEM/STEAM initiatives.	19%	28%	42%	11%	53%
Reputation	Advance the reputation of their district.	13%	39%	24%	24%	48%
Reputation	Increase media attention or press for their district.	16%	37%	34%	13%	47%
Burnout	Feel less burned-out.	19%	41%	24%	16%	40%

PRACTITIONERS

INDICATOR	STATEMENT	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	AGREE + STRONGLY AGREE
STEM beliefs	I believe STEM/STEAM activities offer a fun way for students to learn.	0%	0%	3%	19%	77%	96%
STEM excitement	I am excited to integrate STEM/ STEAM topics in my curriculum in the future.	0%	0%	3%	35%	61%	96%
STEM creativity	As a result of access to LEGO Educations Solutions, my students are more able to build something mechanical (like a robot) than before.	0%	0%	6%	52%	42%	94%
STEM integration	I plan to integrate STEM/STEAM into my curriculum to a greater degree than before.	0%	0%	6%	48%	45%	93%
STEM knowledge	I have increased my own knowledge of STEM/STEAM topics.	0%	0%	13%	52%	35%	87%
STEM creativity	As a result of access to LEGO Educations Solutions, my students are more able to take apart machines and figure out how they work than before.	0%	0%	16%	45%	39%	84%
STEM comfort	I am more comfortable teaching STEM/STEAM topics in my classroom than I was before.	0%	3%	13%	39%	45%	84%
STEM beliefs	I realize the importance of STEM/ STEAM learning more than I did before.	0%	0%	19%	26%	55%	81%
STEM creativity	As a result of access to LEGO Educations Solutions, my students are more able to solve a math problem more efficiently than before.	0%	0%	35%	55%	10%	65%

INDICATOR	STATEMENT: To what extent have the LEGO Education Solutions helped your students to...	NOT AT ALL	TO A SMALL EXTENT	TO A MODERATE EXTENT	TO A LARGE EXTENT	MODERATE + LARGE
Problem-solving, motor skills, etc.	Improve their problem-solving abilities.	3%	7%	39%	52%	91%
Problem-solving, motor skills, etc.	Improve their motor skills.	0%	10%	39%	52%	91%
Problem-solving, motor skills, etc.	Improve their critical thinking skills.	3%	47%	48%	42%	90%
STEM knowledge	Find creative solutions to problems.	3%	10%	48%	39%	87%
STEM knowledge	Develop knowledge about STEM/STEAM topics.	3%	13%	39%	45%	84%
Career aspirations	Spark interest in STEM/STEAM careers.	3%	23%	42%	32%	74%
Career aspirations	Take a greater interest in their studies.	3%	26%	52%	19%	71%
Career aspirations	Develop career aspirations.	3%	31%	55%	10%	65%
Career aspirations	Improve their academic performance.	3%	39%	45%	13%	58%

INDICATOR	STATEMENT: To what extent have the LEGO Education Solutions helped your students to...	NOT AT ALL	TO A SMALL EXTENT	TO A MODERATE EXTENT	TO A LARGE EXTENT	MODERATE + LARGE
Curiosity	Become more curious.	0%	0%	45%	55%	100%
Creativity	Develop a playful attitude toward learning.	0%	0%	45%	55%	100%
Curiosity	Express creativity.	0%	3%	32%	65%	97%
Curiosity	Get inspired to explore a new idea or topic.	0%	6%	45%	48%	93%
Creativity	Think of different ways to solve problems.	0%	6%	42%	52%	94%

INDICATOR	STATEMENT	NOT AT ALL	TO A SMALL EXTENT	TO A MODERATE EXTENT	TO A LARGE EXTENT	MODERATE + LARGE
Self-Efficacy	Improve their confidence in their abilities.	0%	6%	52%	42%	94%
Self-Efficacy	Believe challenges can make them smarter.	0%	6%	39%	55%	94%
Organizational commitment	Want to share the work they're doing with others.	0%	7%	50%	43%	93%
Self-Efficacy	See themselves as learners.	0%	10%	42%	48%	90%
Engagement	Increase their engagement in school.	0%	10%	35%	55%	90%
Grit	Finish the activities they began.	0%	13%	39%	48%	87%
Self-Efficacy	Embrace or approach problems or activities that look challenging.	0%	13%	35%	52%	87%
Organizational commitment	Be proud of their school.	0%	13%	43%	43%	86%
Job satisfaction	Feel hopeful about the difference they can make for the children they serve.	3%	13%	27%	57%	84%
Curiosity	Make decisions that take them outside their comfort zone.	0%	16%	48%	35%	83%
Organizational commitment	Feel more committed to their school's mission.	0%	17%	43%	40%	83%
Curiosity	Take the initiative to learn more about one of their interests.	0%	19%	45%	35%	80%
Job satisfaction	Remember why they do this work.	3%	17%	30%	50%	80%
Collaboration	Become more adaptable in teams.	0%	21%	54%	25%	79%

INDICATOR	STATEMENT	NOT AT ALL	TO A SMALL EXTENT	TO A MODERATE EXTENT	TO A LARGE EXTENT	MODERATE + LARGE
STEM integration	Integrate STEM/STEAM content in their curriculum.	0%	23%	29%	48%	77%
Burnout	Feel more energized at work.	3%	20%	40%	37%	77%
Collaboration	Value other students' perspectives.	0%	24%	52%	24%	76%
Collaboration	Improve their ability to work well with others.	4%	21%	43%	32%	75%
Burnout	Feel more supported by their administration.	7%	20%	40%	33%	73%
Job satisfaction	Feel more satisfied at work.	0%	27%	37%	37%	74%
Parental relationships	Have more regular communication with parents/caregivers.	14%	21%	45%	21%	66%
Parental relationships	Provide parents/caregivers with support to help them further the education of their students.	12%	27%	38%	23%	61%
Parental involvement	Engage parents and families.	11%	29%	25%	36%	61%
Engagement	Improve their academic performance.	3%	37%	43%	17%	60%
Engagement	Improve attendance in class (in-person or virtual).	14%	28%	31%	28%	59%
Parental relationships	Provide parents and caregivers access to the tools they need to support student learning.	17%	24%	38%	21%	59%
Grit	Not be easily discouraged by setbacks.	3%	39%	29%	29%	58%

X. APPENDIX B

References

Some validated scales were slightly modified from their original form to be more relevant to our populations.

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XI. APPENDIX C

Focus Group Discussion Guide

Schedule & Dates -

Group 1	Oct 13, 2020	4:30-6:00 PM EST
Group 2	Oct 13, 2020	7:00-8:30 PM EST

Discussion Flow Summary

	Allotted	lative Time
1. Intro		
2. Icebreaker	ıs	ıs
3. Initial Thoughts & Expectations With LEGO Education Resources	ıs	ıs
4. Exploration of Outcomes With LEGO Education Resources	ıs	ıs
5. Wrap Up		ıs

Background Notes [For Moderator's Knowledge Only]

- Note- want to recruit participants who are aware they will be working with the LEGO Education Resources
- Over the summer put out an RFP to districts to raise your hands if you want computers and LEGO Education Solutions for the kids you serve during COVID- extensive application
- Selected 40 districts to receive LEGO Education Solutions
- Lego Education Solutions, Chromebooks/Windows, and $4k internet stipend to help connectivity during the COVID for low income in need districts
- Recruiting from these 40 districts
- Prefer to focus on educators and districts receiving SPIKE PRIME 5-8 grade
- LEGO Education said they are in the process of creating our own efficacy and think they can use this cohort of 40 districts to help them define their own efficacy
- FB put together a research plan
- One group are teachers and one administrator/stem coordinators (the decision-makers for signing/bringing on these solutions)
    - Note- the practitioners/teachers likely haven't received these yes, so it's an anticipatory discussion
- Want to understand what the potential impact of these kits are

- How do they define success?
  - What would return on investment be? (note these are free)
  - What does success look like?
- Trying to get to the end game of a logic model
- Following the focus groups, FB will work with LEGO to create a logic model and define the potential outcomes/impact that the solutions have
- FB will then map these outcomes to measurement tools and conduct a pre/post study
- Purpose for group - identify the outcomes that should be measured in the LEGO efficacy research (diff for teachers vs STEM coord/admins).
  - Answer the hypothetical questions --
    - Admin -- If you were not getting these for free, what would make it worth your while?
    - Practitioners -- what makes the time investment worthwhile?
- Note- LEGO Education Solutions are a robot/coding kit -- retails approx. $350 per kit (same cost as laptop)- in non COVID world, often need one for every two kids, but in
- COVID times these were one for every kid if district sent home to families
- Reminder -- Most districts have received LEGO Education Solutions at this point but teachers may not have
- INTRO: YOUR about to get these...what is going to make these tools worth your while?
- ASPIRATIONAL - WHAT ARE YOU HOPING?
- What changes do you want to see in your kids? yourself?
- What impact do you have on you to make it worth your while?
- Link to LEGO Spike https://education.lego.com/en-us/products/lego-education-spikeprime-set/45678#spike

Key Focus Group Objective

Learn about initial expectations and desired outcomes working with LEGO Education Solutions.

Discuss Flow

1. Introduction [Allow 5 minutes – Cumulative time: 5 Minutes]

- Welcome and thanks
- Introduce myself as an independent researcher. It is important to know that I do not work for the companies we will be discussing today.
- You will not be contacted or sold anything as a result of this study.
- Discuss the online focus group approach, recording, observers

2. Icebreaker [Allow 10 minutes – Cumulative time: 15 Minutes]

- Your first name?
- Your role and the type of organization you work for?
- How would you best describe the population you serve?
- Where do you teach or work?
- Why did you become an educator/administrator/STEM coordinator?
- How long have you been doing this for?

3. Initial Thoughts & Expectations With LEGO Education Resources [Allow 15 minutes – Cumulative time: 30 Minutes]

Initial Thoughts -- Let's talk about STEM/STEAM

- **General importance of STEAM:** How important is teaching STEAM skills within your district? Is there a specific STEAM focus? STEAM clubs?
- **Current STEAM materials?** What materials are you already using to teach STEAM? How has that been working?
- **STEAM hopes**: What are your hopes for your kids generally with regard to STEAM Learning?
  - Short term - What do you hope they will achieve this year?
  - Long term -- What do you hope they will achieve in the future as a result of their STEAM learning?

Set-Up From Moderator: As you know, your district has been gifted a number of LEGO Education Solutions for your use with your students. I know that while the LEGO Education Solutions kits have been shipped to the districts, most districts have not yet distributed them to the families or classrooms as of yet. So to ground us all for the purposes of this discussion, let's watch a brief 15-second video and then talk about expectations you have at this moment in time.

Stimuli To Show

Start With Two Minute Intro [2:06] https://education.lego.com/en-us/start/spike-prime/intro
Then play Teacher Resources Video [1:27] https://education.lego.com/en-us/start/spike-prime/teachermaterial

- Summary slide on what they get - Can we show a slide that quickly shows everything included in their LEGO kits and opportunity (educator training, access to lesson plans, etc.) so they can see what they are always going to get?

- If needed- we can always use the defaul product page - https://education.lego.com/enus/products/lego-education-spike-prime-set/45678#spike%E2%84%A2-prime
  - Note: These scale --
    - https://education.lego.com/en-us/elementary/intro
    - https://education.lego.com/en-us/start

Initial Thoughts -- LEGO Education Solutions

- Group 1: For administrators --
  - Why did your district apply for LEGO Education Solutions as part of this program? - Was there a specific reason you applied for this?
  - Received? - Have you received them yet? Do you know when you will be receiving them?
  - Pre-planning -- Do you know how your district plans to use them (examples: send home with kids, use in the classroom, start a STEM club, etc.)?
- Group 2: For educators --
  - Hear about? - How did you hear about the LEGO Education Solutions you will be receiving? How much information do you have at this point about what you will be getting and when?
  - Received? - Have you received them yet? Do you know when you will be receiving them?
  - Pre-planning -- Do you know how your district plans to use them (examples: send home with kids, use in the classroom, start a STEM club, etc.)? How has knowing you'll have access to them changed your lesson planning?
- For all --
  - Most excited about it? - What excites you most about receiving these LEGO Education Solutions?
  - Anticipated change in STEAM approach/impact -- Do you anticipate that access to these LEGO Education Solutions will change how you teach STEAM in your class, school, or district? (examples: Elevate curriculum, make it interactive for the first time, create a robotics club?) What impact will those changes have?
  - Learning Challenges - When you think about the challenges you have in supporting the kids in your district in general, what challenges are you hoping/anticipating LEGO Education Solutions could help you overcome?

4. Deeper Exploration of ANTICIPATED Outcomes With LEGO Education Solutions [Allow 45 minutes – Cumulative time: 75 Minutes]

Full PDF white page: https://www.legofoundation.com/en/learn-how/knowledge-base/what-we-mean-by-learningthrough-play/

Student Impact

- Hopes for Kids -- What are you hoping your kids/the kids in your district will get out of the use of LEGO Education Solutions?
  - Short term -- What impact do you hope having this tool will make this year? Are there specific changes you wish to see in your students as a result of the use of LEGO Education Solutions?
  - Longer term -- what impact do you hope having this tool will make for these kids in the future?
- Solve specific problems? - Does this program solve a particular problem for you and/or your students?
- Soft Skills [2 SLIDES - one on skills and one on potential impacts]
  - Skill Set 1: Holistic Skills [internal called: Overall Soft Skills] - What are the soft skills you hope your kids will learn using the Lego Education Solutions?
    - Creativity?
    - Team work?
    - Communications?
    - Independent Learning?
    - Critical thinking?
    - Resilience?
    - Innovation?
    - Leadership?
    - Problem solving?
    - Adaptability?
    - Concentration?
    - MISSING - What other soft skills are of value?
    - MINDSET → They talked a lot about changing the mindset. How would they describe the mindset today and what are they doing to change mindsets in this way?

HOLISTIC SKILLS DOMAIN	ESSSENTIAL SKILLS
CREATIVE	Imagination, Symbolic Representation, Divergent Thinking, Executive Functioning
SOCIAL	Communication, Collaboration, Teamwork, Sharing Ideas, Empathy, Negotiation
EMOTIONAL	Self-Awareness, Self-Regulation, Motivation, Resilience, Self-Efficacy, Confidence in Learning
COGNITIVE	Language, Numeracy, Learn-to-Learn, Critical Thinking, Problem Solving
PHYSICAL	Motor Skills, Spatial Understanding, Visuo-Spatial Perception, Sensory Integration

    - Skill Set 1: Holistic Skills Impact [Soft skill impact] - What do you think the impact of those soft skills are? (Moderator to probe why/how)
        - Hope (eg being a better learner/growth mindset/hope for their future)
        - A greater sense of self-worth, etc.?
        - Confidence/Self-esteem/Self-concept?
        - Increased engagement in school
        - Increased STEAM self-efficacy
        - Increased academic self-efficacy
        - Increased curiosity
        - Raise educational or career aspirations
        - Improved interpersonal skills or conflict resolution skills
        - What else?
    - WHY is developing these skills important?
    - Comparable method today - What are you using today in teaching (if anything) that helps you get to these soft skills and outcomes today?
        - What do you hope the LEGO kits will help you do that you can't do already in terms of developing soft skills?
- Academic Knowledge [Hard Skills] [SLIDE -- just one on skills]
    - Academic Knowledge [Overall Hard Skills] -- What are the hard skills you would hope your students will learn using the LEGO Education Solutions?
        - Math Concepts
        - Coding
        - Science
        - Engineering knowledge
        - What other hard skills are of value?
    - Academic Knowledge [Hard Skill] Impact -- What do you think the impact of those hard skills are? (moderator to probe why/how)
    - Comparable method today -- What are you using today in teaching (if anything) that helps you get to these hard skills today?
        - What do you hope the LEGO kits will help you do that you can't do already in terms of developing hard skills?
- Hard skills vs soft skills preference? - As an educator, which do you value more- hard skills or soft skills and why?
- Post LEGO universe - How do you expect your kids to be different post-LEGO Education Solution access? Is there anything we haven't discussed?

Educator Impact

- Educator impact - How do you think having access to LEGO Education Solutions will impact you as an educator/educators in your district?
  - Short term (this year)
  - Longer term (in years to come)
  - Do you think it will… [SLIDE] (moderator to probe why/how)
    - Reduce burnout
    - Increase job satisfaction or retention
    - Improve your emotional experience at work
    - Increase your organizational commitment
    - Improve parent and caregiver interactions and engagement
    - Increased sense of self-efficacy
    - What else?
- Comparable Method Today - What other resources that you have access to today, if anything, results in that same impact?
  - What do you hope the LEGO kits will help you do that you can't do already?
- Change your teaching practice - How do you think access to LEGO Education Solutions will change your teaching practice, if at all?

Parent and Community Impact

- Parent and caregiver impact --
  - How do you anticipate parents and caregivers being involved with this program/the LEGO Education Solutions?
  - Do you think access to LEGO Education Solutions will have any impact on parents, caregivers, and families as a whole? If so, what? Short and long term.
- Community impact -- Do you think the access to LEGO Education Solutions will have any impact on the larger community? If so, what? Short and long term.
  - Moderator note: If respondents refer to the gift/award of LEGOs, ask if the impact would hypothetically be similar/different if they had purchased the LEGO Education Solutions

5. Return on Investment [Allow 10 minutes – Cumulative time: 85 Minutes]

LEAD IN: I know these kits were gifted to your district, but let's talk for a few minutes about the time and funding that another district would need to invest to get access to these LEGO Education Solutions. Each kit typically costs around $330. LEGO recommends one kit for every two students when the kits are being used in class, and as you know, the LEGO Foundation has generously made it possible for your district to send a kit home with each student during the pandemic, if the district chooses to do so.

- Time investment -- While your district has been gifted these LEGO Education Solutions, you and your fellow educators/educators in your district are needing to invest time in maximizing its use.
  - How much time do you anticipate investing?
  - How are LEGO Education Solutions valuable and what outcomes would you need to see to make this time investment worthwhile?
- *If they were not free - Keeping in mind I am a neutral party….If you were not getting these for free, what would make these tools worth your while, given your limited budgets?
  - How is this valuable and what outcomes would you need to see to financially invest in these/recommend your district invest in these LEGO Education Solutions?
- Do you see this more as a core product for class, after school, enrichment…where do you see this making most of an impact?

6. Wrap Up [Allow up to 5 minutes – Cumulative time: 90 Minutes]
Part A: What If you would not be getting the LEGO kits.. what would you be most disappointed about losing?

Part B: What defines success for you? - Imagine being done teaching the use of LEGO Education Solutions in your district.

What is the number one outcome that would define success for you/make it worth the investment of your time and resources?

Moderator to explain Marketplace credit for admins $200 and for teachers $100

Notes After Group 1
- Group 1 talked about a change in mindset- don't want kids to give up, have fun, and change the teacher's mindset as they will change their perspective on STEM.
- Tabatha had some good stories on the impact
- push harder on the WHY is it important?

Notes After Group 2
- Emphasize familiarity with CLC initiative even if they don't have specific instructions yet, not that most people heard about this from First Book

Debrief
- The change in mindset was interesting in both groups and attribute to LEGO solution, wanting their kids to feel like learners and accomplish things and not give up
- Educators talked more about the life lessons

- Educators talked more about the life lessons
- “WE all go into teaching to see them grow and get successful...lightbulb, all you can hope for “ Clip
- “Getting the legos showed commitment from schools” Clip
- Struck about the time investment- totally worth it even though they are so strapped for time
- Both groups talked about positive family engagement vs they have to their homework more
- 2nd group said its “fun”, learning through play- they WANT to learn to code for themselves
- a long term outcome and enjoy getting there
- Learning through play was appreciated by both groups
- Educators thought that their self-efficacy would go up
    - They will burn out less
- If these can get them into trade school- it's not just 4-year college, other options and this showed them that
    - the word “broadening”
- wanted the kids to learn about other skills and job opportunities
- One kid might not be viewed as smart, they build and BOOM
    - we want to clip as many kids story
    - Viola had a lot but was hard to hear and might have some really good quotes
    - might have to put something Viola said as hard to hear
- Not that much SEL from Educators
    - FB liked the one teacher who said because of covid, they have to mix and match in other students and that is good (Amanda R)
    - this is an opportunity they would not normally say
- headlines at the end were critical and it worked with these two groups
    - Kids finally pass the exam- all they added legos
- If we find other quotes- FB can use them- lots of sound bytes
- Listen for
    - Anything that was on diversity (not much) - Madelyn in group1 tackled about students were underrepresented - girls
    - I want all my kids to have access - education equity
    - SEC = socio-economic
    - anything mental health-related
    - wont want ot have any videos saying that they heard about this from FB

XII. APPENDIX D

Focus Group Detailed Report

Table of Contents

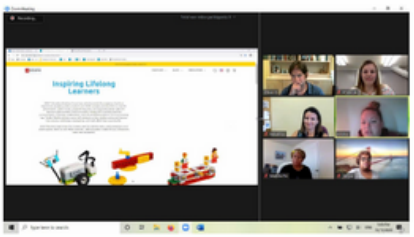
OneSpark

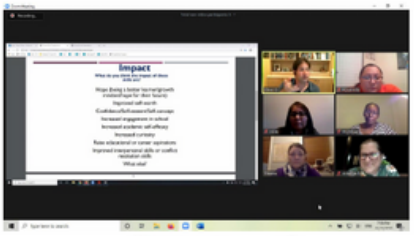
2

Background

Background: Remote Focus group Study

- **When & Who:** On October 13th 2020, OneSpark was commissioned by First Book to conduct two focus groups with two segments: Administrators and Educators.
- **What:** Each focus group was asked a number of questions around the donated LEGO Education Solutions to identify the outcomes that should be measured in the upcoming LEGO efficacy research.
- **How:** Participants were interviewed remotely with web-conferencing software, which allowed them to use their own computers from work or home, making it possible to participate from around the US.
- The users and moderator also viewed a small picture in picture image of each other, using screen recording and web conference software.
- Each focus group was approximately 90 minutes long.



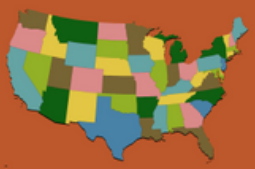


OneSpark

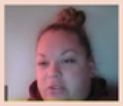
3

Participants

Nationwide Recruitment



Administrators: All were from one of 40 districts selected to receive LEGO Education Solutions with a focus on those receiving SPIKE PRIME 5-8 grade.

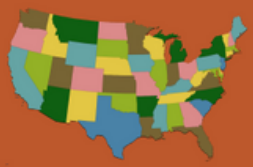
Participant	Role	State
	Principle	Oregon
	Curriculum Director	Georgia
	Family Resources Coordinator	Kentucky
	East Services Coordinator	Kentucky
	School Administrator	Texas

OneSpark

4

Participants

Nationwide Recruitment



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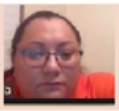
Educators: All were from one of 40 districts selected to receive LEGO Education Solutions with a focus on those receiving SPIKE PRIME 5-8 grade.

Participant	Role	Grade(s)	State
	Special Education Department Chair	PreK-5	Texas
	Gifted and Talented Education Teacher	NA	Arizona
	Gifted Teacher	6th-7th grade	Arizona
	Special Education Teacher	4th grade	Maryland
	Enrichment Teacher	4th grade	Kentucky

5

Top Themes

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Top Themes

- Providing access to STEAM/STEM resources and tools was important to all participants as this provided students a learning opportunity they might not otherwise get.
- Important for several participants, was a desire to shift the mindsets of students, other educators, and families that students *can* learn through play.
- Providing students the opportunity to grow their confidence, self-worth, and understanding of math, engineering, and coding through the LEGO Education Solutions was desired by all participants.
- To lose out on this opportunity was considered a deep and heartbreaking loss by both participant segments.

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Observations

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Initial Thoughts on STEM/STEAM and LEGO Education Solutions

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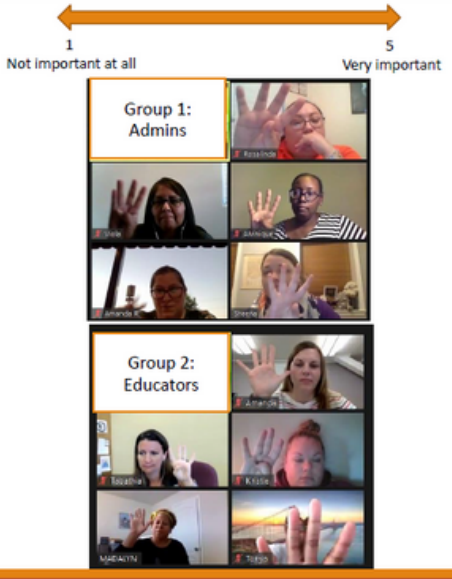
General importance of STEAM/STEM

- **All reported STEAM/STEM was important –** Both Administrators and Educators stated STEAM/STEM was important to their schools and/or districts.
- On a 1 to 5 scale (5 being very important), all participants rated STEAM/STEM importance at 4 and/or 5.



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10

Hopes for students – Short Term

"What are your hopes for your kids generally with regard to STEAM Learning?"

Short Term

- **Access to resources for more students –** Many participants across both segments stated one of their short term hopes for students was to get STEAM resources into the classroom and to as many students as possible.
- This was especially important for underrepresented students in STEAM, such as girls, minorities, and special needs students.

- **Get students to problem solve and think critically –** Participants reported it was their hope that STEAM resources/tools would help teach and encourage students to both problem solve and to think critically in new/different ways.
- **Engage students and families in learning together –** Participants stated they hoped to not only engage students in learning, but their families as well. They expressed that this needed to be the *right kind* of engagement from parents/caregivers, letting the students struggle a little before providing the support to help students learn.

OneSpark 11

Hopes for students – Long Term

"What are your hopes for your kids generally with regard to STEAM Learning?"

Long Term

- **Develop more STEAM/STEM resources and programs at their school –** For long term goals, many participants stated they wanted to develop or expand STEAM/STEM resources and program at their school(s), such as by getting more buy-in from other teachers or at the district level.
- This included programs such as moving toward STEM/STEAM certifications and integrating STEAM across classes.
- **Provide future career aspirations –** Participants also wanted to help students see that there are other career paths by providing them exposure to STEAM.

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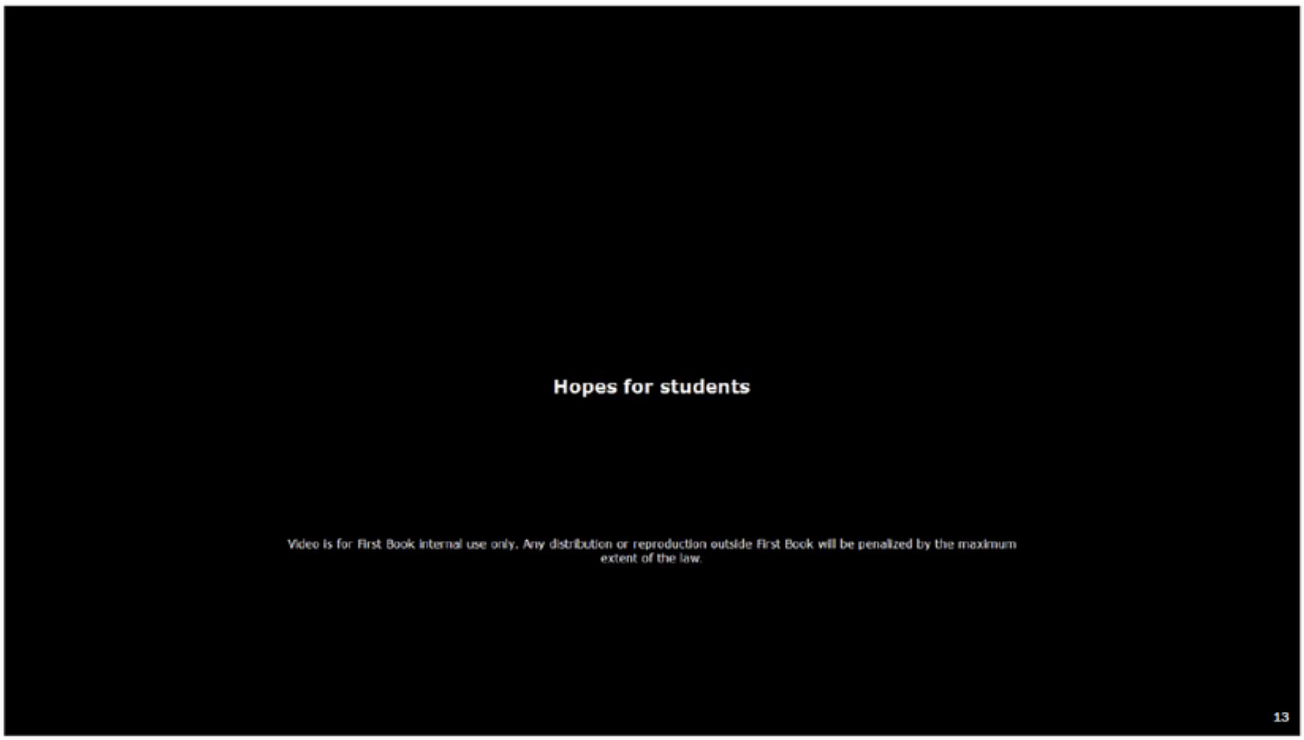

Admins: Why LEGO Education Solutions

Admins: "Why did your district apply for LEGO Education Solutions as part of this program?"

- **To get resources to kids who need them –** Many Admins reported this opportunity could help fill gaps between students by getting resources to kids who may not normally have access to STEAM tools and resources.
- The LEGO Educations Solutions would specifically give them access to STEAM learning that will engage students in a fun but also *familiar* way.
- **Pandemic opens eyes to the need for technology, including STEM/STEAM resources –** At least one participant explicitly stated that the pandemic and remote learning opened her district's eyes to the need for technology in the future (as well as currently).
- She stated that LEGO Education Solutions would support learning to code which will help students learn the skill they need for the future.
- **"It's free LEGO!" –** Not only did one participant apply for this because they were "free LEGOs," but because LEGO was fun for students and at the same time provided them with something tangible.

OneSpark 14

Educators: How teachers plan to use these kits

Educators: "Do you know how your district plans to use them, and how has knowing you'll have access to them changed your lesson planning?"

- **One already had some distributed –** One participant already had some kits distributed and was currently using them in her remote learning.
- **Had initial ideas on how to use –** These participants reported having an idea of how they would like to use these kits, such as in an after-school or as a club (depending on how many they receive).
- **Provides a focus –** At least one participant stated having these kits would help provide a focus not only for students, but for her as well as it will give her something to use in class or send home.

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Reasons participants are excited about LEGO Education Solutions

- **Ability to give resources to kids who would not normally get them –** Many participants across both segments reported they were very excited to be able to provide access to STEAM/STEM resources to kids who don't normally use tools like this (such as older students). This would also get these students excited to learn.
- **Learn through play –** Several participants reported they were excited to not only help their students learn through play (and build SEL at the same time), but also reported excitement to "play" and learn with these kits themselves.
- **A different way to learn –** Participants also stated this would provide their students a different way to learn (e.g., tactilely, spatially, and motor skills) in a creative way.
- **The work is already done –** One participant also voiced excitement that she did not have to scrounge up resources and a lesson plan for this as it was already done.

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What participants are most excited about receiving LEGO Education Solutions

18

Anticipated change(s) in STEAM approach/impact

- **Change perspectives of STEAM/STEM –** Participants reported they expected the LEGO Education Solutions program to help change the perspective around STEAM/STEM among students and families.
- They also hoped this perspective change would extend to their own faculty, allowing other educators to see this as a more accessible, tangible, and fun way for students to learn.
- **Expand learning around engineering concepts in an approachable way –** Many participants also expected this program to help expand learning around engineering (as well as coding) in a fun and interactive way.
- **Use in the new remote learning setting, though it will be a challenge –** Though participants reported this could be a challenge, there was an interest and excitement around being able to give kids something tangible to learn with in a remote setting. (One participant was already doing this and reported success and high engagement.)
- **Build student confidence and/or "grit" through tactical learning –** Participants also reported they hoped this program would help build more student confidence and "grit". This would especially help those students who gave up easily when learning new things.

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Anticipated change(s) in STEAM approach/impact

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Admins: Learning Challenges

- **Make it engaging for students, teachers, and parents/caregivers** – One learning challenge school administrators reported was finding a way to engage both students and parents, as well as some teachers in STEAM/STEM learning.
- But many stated they saw this as an opportunity to engage the entire family during such a stressful time by presenting them with something familiar and fun (LEGOs), while showing families that students can learn through play.
- **Fear of technology –** One participant reported a fear of technology was a learning challenge among some students.
- This was especially true for those students who were unfamiliar with or had little to no access to technology, but they hoped LEGO Education Solutions would allow these students to become more comfortable with technology.

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Learning Challenges as reported by Admins

22

Deeper exploration of anticipated outcomes with LEGO Education Solutions

23

Admins: Hopes for students

When asked what their hopes for their students were, Admins reported hoping to:

- ✓ Grow confidence and self esteem, especially for those students who were often struggling or at risk
- ✓ Create long term STEAM/STEM careers aspirations for all students by allowing them to see how these skills can be applied in a tangible way
- ✓ Help ALL kids, including getting girls and underprivileged students to engage in STEAM/STEM
- ✓ Give students something tangible and familiar to learn with
- ✓ Teach students to push themselves and question the world around them

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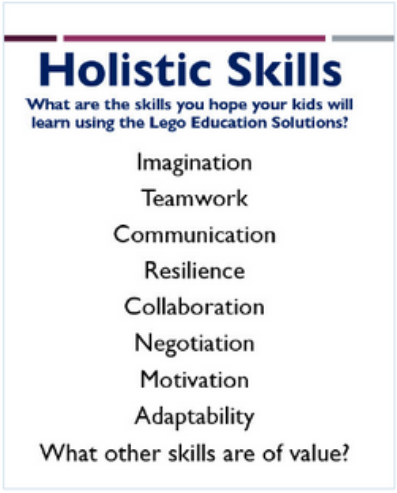
Holistic Skills

Though participants reported all these skills as important, participants were asked to prioritize most important:

- **Collaboration and teamwork –** The ability to work with others, even if they may not like them or get along.
- **Communication –** The ability to communicate with others and share ideas effectively, as well to learn how to present their own ideas.
- **Imagination –** To learn to use their imagination and be creative, something that seems to get lost as kids grow.
- **Resilience –** To be able to make it through struggles, changes, and to bounce back.
- **Adaptability –** To be able to be flexible and to keep pushing and not give up, even when faced with challenges.
- **Two participants also reported a few missing skills from this list:** Exploration, Patience, and Perseverance.



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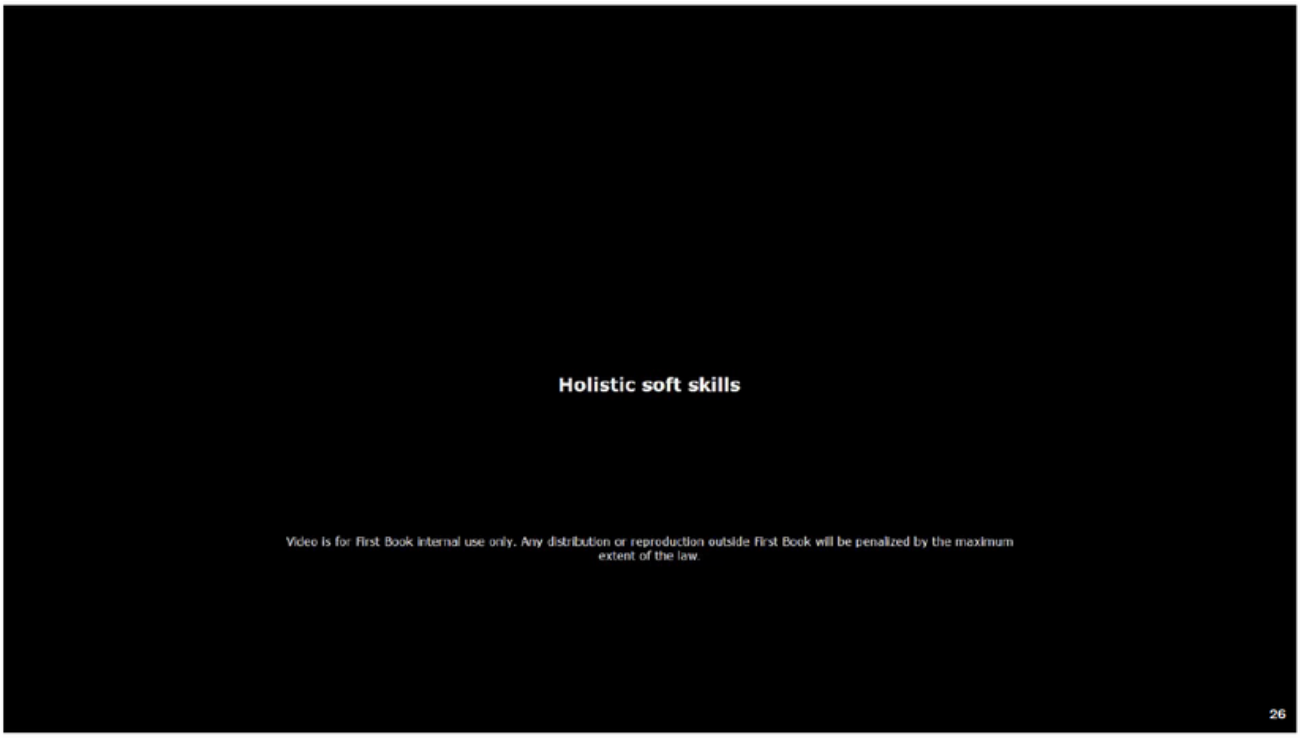

Holistic Skills Impact

When asked the impact of these skills, participants overall reported these as the most important:

- **Improve self-worth –** Many reported they wanted to help build self-worth among their students, especially for those students who feel left behind.
- **Confidence/self-esteem/self-concept –** Participants reported that a program like LEGO Education Solutions could help build confidence in their kids by providing them a different way to learn.
- This would allow students to be successful in a different kind of light, helping their self-esteem.
- **Increased academic self-efficacy as well as career aspirations –** Many participants stated STEAM tools and resources would help their students understand that they can not only be successful in their academic careers but also in their future work/career paths.
- This would allow students to consider paths they may not have before (e.g., the sciences, engineering, or even trade schools).

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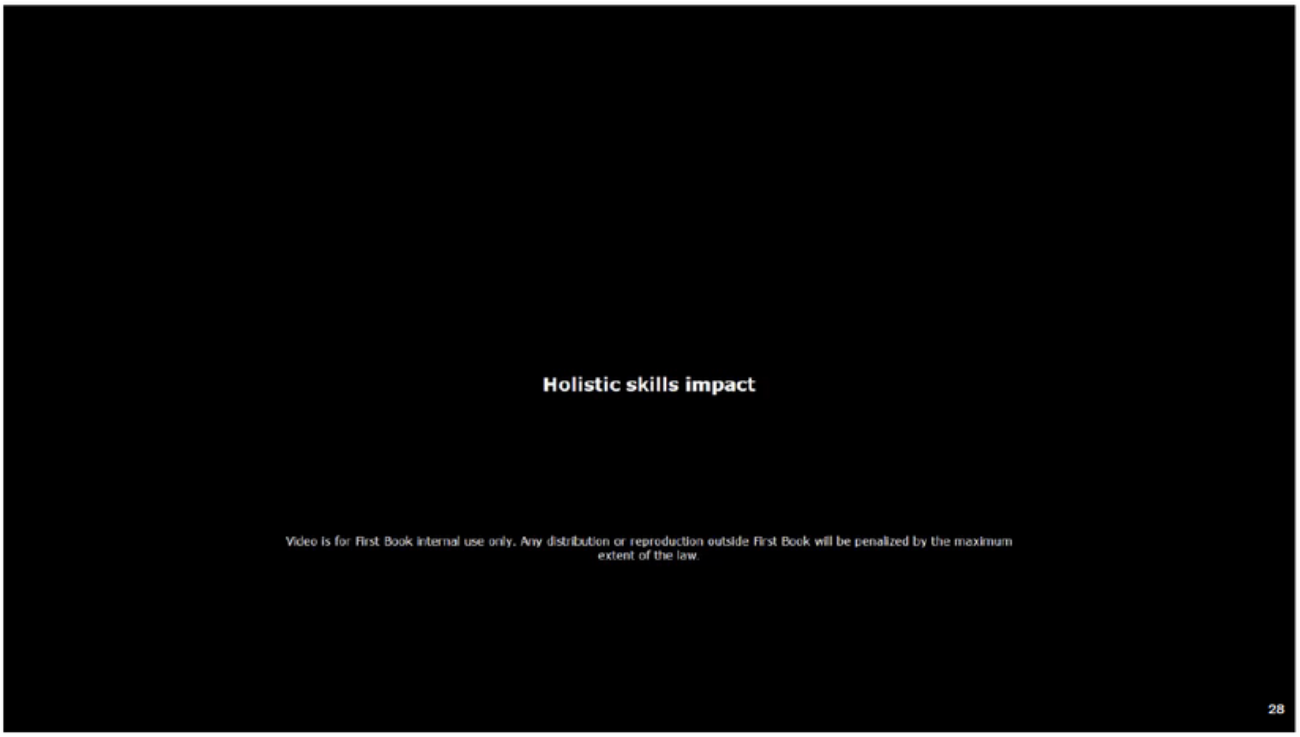

Mindset changes

When asked about the current mindset around STEAM and how they hope/expect it will change, participants reported:

- **Make learning fun again** – One participant said that she wanted to make learning fun again for her students. She stated there has been a shift away from "fun" and imagination over the years and she wanted to bring kids back to learning through fun and play. At least one participant stated they wanted other educators to change their mindset and teach more from the mindset/belief that learning CAN be fun.
- **Help students understand a different way of thinking** – Many participants stated they just wanted a way to give students a different way of thinking, such as helping them realize there is more than just "one right answer."
- **Enrich students experience to help build self worth and perceived future opportunities** – The ability to use this LEGO Education Solutions program to enrich students' learning experience while also helping them build self-worth was reported as very valuable among both Educators and Admins in changing mindsets.
- This would also provide these students with possible future opportunities, both academically (giving them the tools to continue projects like this on their own) as well as beyond (going to college, trade schools, or other career paths) in ways students would not have considered before.

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Mindset changes

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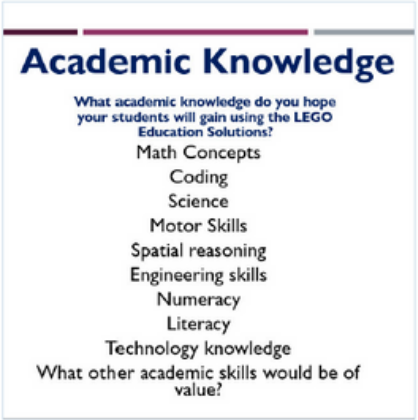
Academic knowledge (hard skills)

- **Coding, science, math, and engineering –** These four topics of knowledge were reported as some of the most important they would hope and expect their students would gain from the LEGO Education Solutions program.
- **Motor skills and spatial reasoning were also important –** Many participants, especially Educators, expected this to help with the motor skills and spatial reasoning not only for those more "fragile learners," but even for older students who do not receive continued learning in this manner outside of elementary school.



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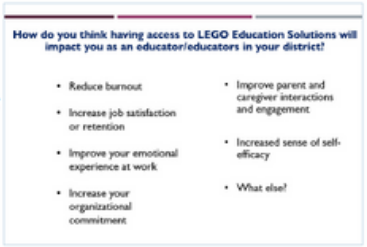
Educator impact

- **Reduce burnout –** This was reported as more important among Educators than Admins, as Educators stated that not only was this something that was already "done" for them, but allowed them to learn and play alongside their students.
- **Job satisfaction –** Both groups stated this would increase job satisfaction as it gave teachers something fun to look forward to doing with their students. This also provides them the opportunity to see the "lightbulb moment" for kids, which one participant reported was such a satisfying aspect of teaching.
- **Organizational commitment** – One Educator participant stated this program shows commitment from the district and thus increases her own commitment.
- **Improve parent and caregiver interactions –** All participants reported this program did have the potential to increase family interaction, which was strived for whenever possible.
- This was something parents could easily be involved in as it brought out "their inner child," and was familiar and interesting because it was LEGO.



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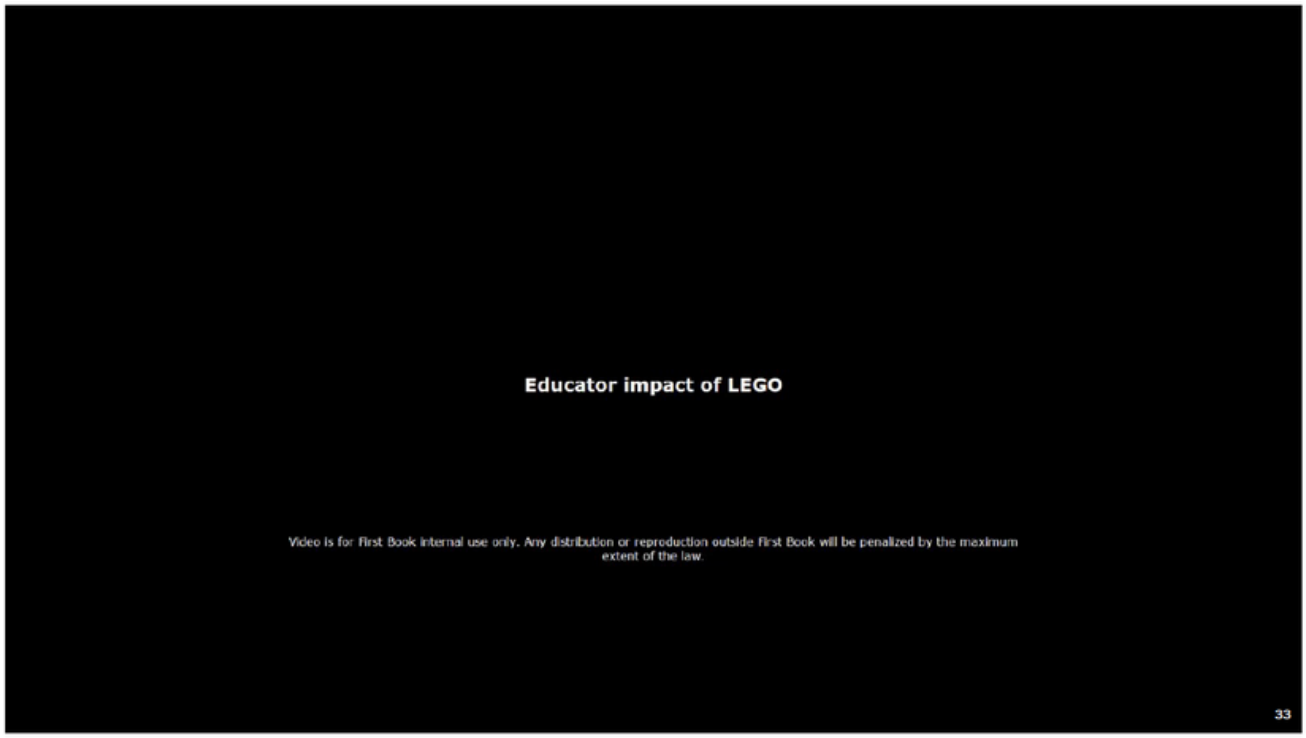
Educator impact of LEGO
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Return on Investment
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Time investment

- **Could be challenging making the time** – Participants across both groups stated that there could be challenges in making time to incorporate a program like this because priority is given to content that aligns with state standards.
- As a result, some participants stated they may need to apply this as an after school activity or club.
- One participant was already spending 30 minutes for each of her 7 classes on LEGO Education Solutions, with students asking if they can join class early to discuss and share their learning.
- **But time investment would have a high reward –** Participants across both groups, however, reported they saw long term value in investing the needed time to allow kids to use and learn through the LEGO program.

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Time investment

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If this was not free, what would make it worthwhile?

- **Depends on who would get them, as budget is limited –** When asked what would make this LEGO Education Solutions program worthwhile if it were *not* free, participants from both segments stated who would get these kits would likely depend on budget.
- For example, several participants stated their higher achieving or gifted students would be more likely to have budget for resources like this than their struggling students (who would benefit just as much if not more from these).
- **Both segments saw value –** Both segments reported value in these kits as it allowed students to learn a valuable skill set, but stated that some kids would be left out if these were *not* free.

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If this was not free, what would make it worthwhile?

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What If you would not be getting the LEGO Education Solutions kits?

- **Disappointment, heartbreak, and tragedy –** When asked this question, all participants were visibly disappointed, reporting the loss of these kits would be "disappointing," "heartbreaking," and "a tragedy."
- **Would loose access to tools to help students in a way other tools and resources could not –** All participants stated they really would lose out on ***ever*** getting these kits because of budget constraints or very limited supply.
- As a result, their students would lose exposure to valuable tools and resources that they otherwise would never be able to access or afford.
- **A lost opportunity to reach kids that really need alternative ways to learn –** Participants also reported they would lose a valuable opportunity to get these kits in the hands of students who really need alternative ways to learn and grow.

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What If you would not be getting the LEGO kits?

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What defines success using LEGO Education Solutions?

Each participant defined success via this tool slightly differently, but the overall themes included:

- Student engagement
- Acquiring new skills and learning
- Growth of curiosity and drive to continue learning and growing through their academic career
- "It's all because of LEGO!"

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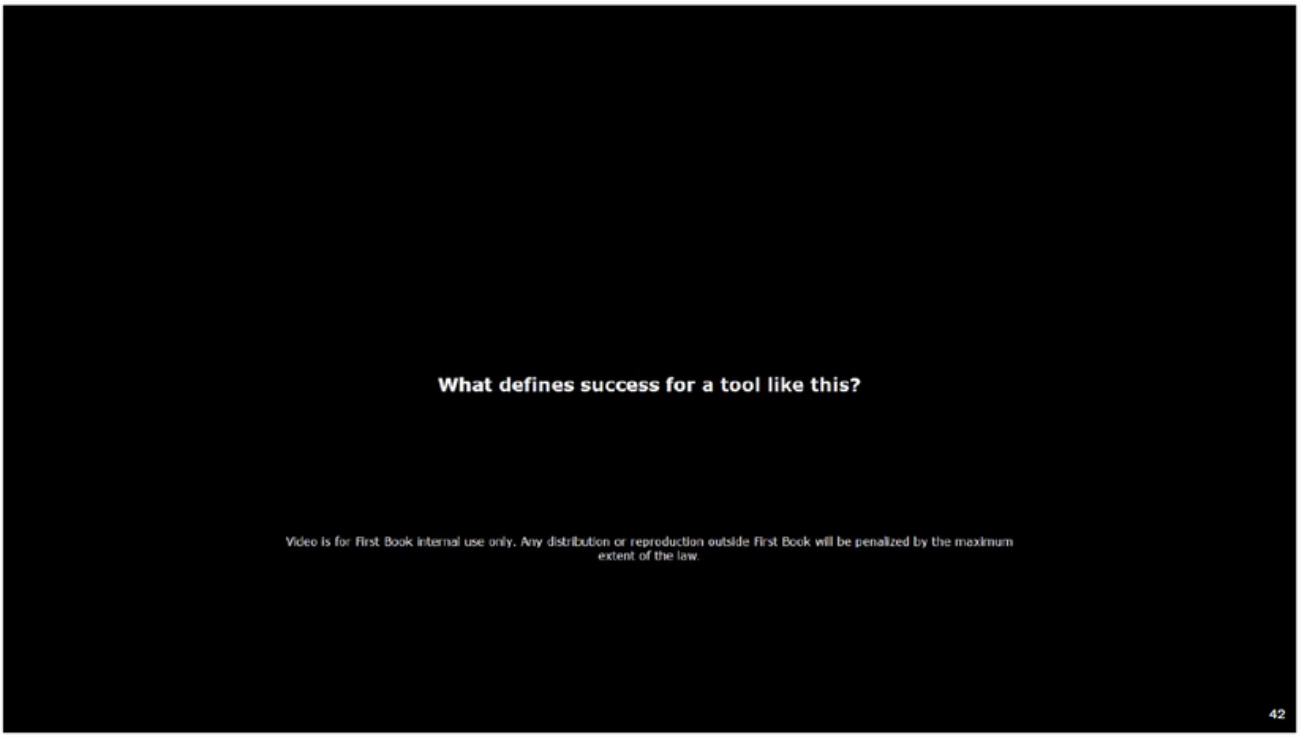

Questions?

Contact: Steve@OneSparkCo.com

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Appendix: Additional Clips

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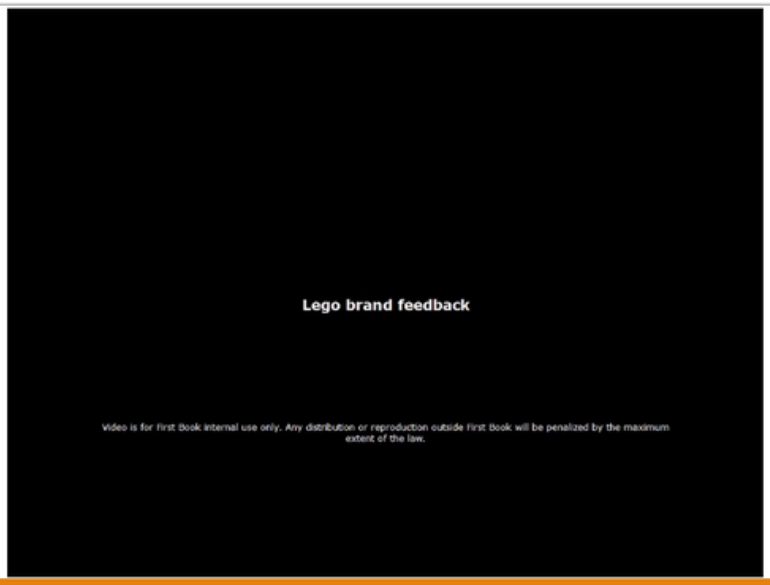
Lego brand feedback



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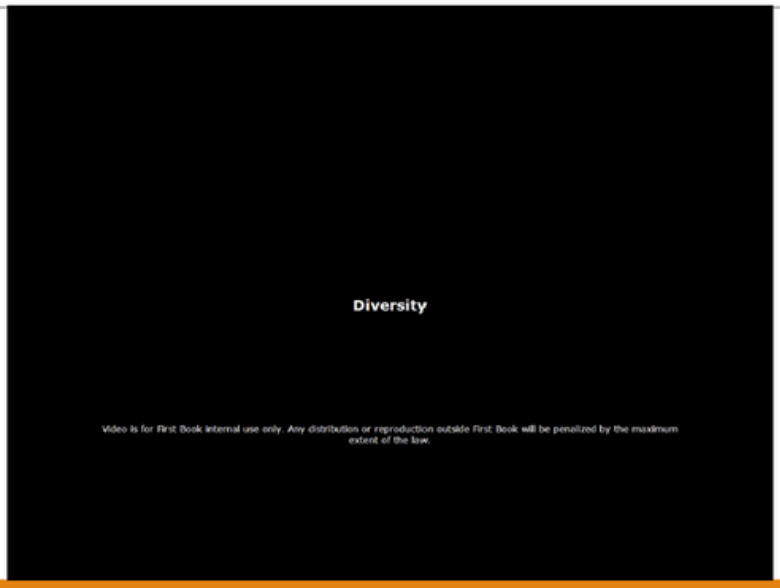
Diversity



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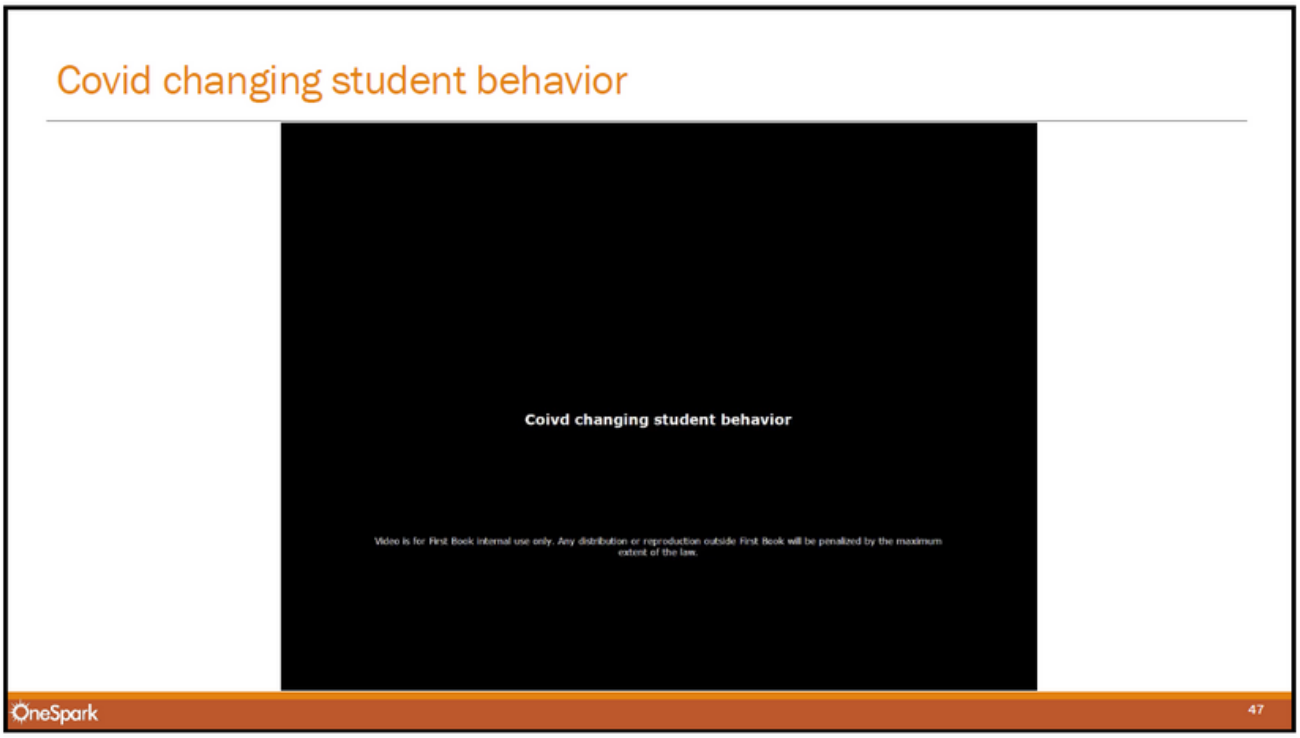
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XIII. APPENDIX E

Survey Instruments

ADMINISTRATOR PRE-SURVEY

Thank you so much for taking the time to participate in our survey! As you may know, First Book is a nonprofit organization focused on providing equal access to quality education for children in need, and as part of our work, provides free and low-cost books and resources to educators and programs working in underserved communities. Through involvement with First Book, your district has been selected to receive LEGO Education Solutions to use with the children you serve.

We are sending you this pre-survey in an effort to understand if and how this infusion of LEGO Education Solutions will impact your district, you as an administrator, and the kids you serve. We want to get as comprehensive and precise an understanding of your current state as possible before your kits arrive or at the early stages of your district's use of the LEGOEducation Solutions. To this end, you will notice that the questions below ask about a wide range of topics and measures that are commonly used in educational research. We greatly appreciate your participation. Please note that this survey is voluntary.

First Book will not share your individual data with anyone outside of First Book. All of your responses are completely confidential and will never be associated with your name. Please do your best to reply honestly where you feel comfortable.

We appreciate your thoughtfulness and candor!

Before we begin, please tell us a bit about your role and the district you work for.

Your district (insert name):

Which of the following best describes your job title?

District-level Administrator (including curriculum developer, superintendent, assistant superintendent, or grant administrator)

District STEM/STEAM Coordinator

School-level Administrator (principal, assistant principal)

School STEM/STEAM Coordinator

Other (please describe)

Which of the following best describes your district's location?

Urban

Suburban

Rural

Indian Reservation/Tribal nation

Military base

First Book would like to follow up with you at a later date to see how the gift of LEGO Education Solutions you received impacted you, your district, and the kids you serve. Please enter your name and email in the space below so we can send you a follow-up survey in the next few months. Your email will only be used to send you a follow-up survey. It will not be used to identify your responses in any way and will not be shared outside of First Book.

Your name (first and last):

Your email:

First Book would like to learn more about the lives and experiences of those who work with kids in need, directly or indirectly, on a regular basis. To this end, the following questions ask about your self-perceptions and professional goals in your current role, whether it's supporting students directly or through the teachers/staff you support. Some of these questions may appear unrelated to resources available in your school/district, but First Book is trying to understand what impact, if any, having resources like LEGO Education Solutions could have on your job satisfaction and other measures. We really appreciate your confidential and honest answers.

Take a moment to reflect on how you think about yourself now, in your current role supporting teachers. Then read each statement carefully and indicate how strongly you agree with each statement.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I feel that I am making a significant difference in the lives of the teachers I support.	○	○	○	○	○
I believe my support helps motivate teachers to be the best teachers they can be.	○	○	○	○	○

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
Most of a teacher's motivation depends on their personal situations, so I have limited influence.	○	○	○	○	○
There is a limited amount that I can do to raise the basic performance level or engagement of the teachers I serve.	○	○	○	○	○
I am successful with the teachers I serve.	○	○	○	○	○
I am uncertain how to support some of my teachers.	○	○	○	○	○
I feel the teachers I work with value my support.	○	○	○	○	○
My teachers' peers influence their motivation more than I do.	○	○	○	○	○

Please indicate how strongly you agree or disagree with each statement in regard to your professional role.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I enjoy discussing my work with people outside it.	○	○	○	○	○
I really feel as if my district's problems are my own.	○	○	○	○	○
I do not feel like "part of the family" at work.	○	○	○	○	○
I feel emotionally attached to my job.	○	○	○	○	○
My job has a great deal of personal meaning for me.	○	○	○	○	○

How satisfied are you with:

	Very satisfied	Satisfied	Dissatisfied	Very dissatisfied
your present job when you compare it to jobs in other organizations.	○	○	○	○
the progress you are making toward the goals you set for yourself in your present position.	○	○	○	○

	Very satisfied	Satisfied	Dissatisfied	Very dissatisfied
the chance your job gives you to do what you are best at.	○	○	○	○
your present job when you consider the expectations you had when you took the job.	○	○	○	○
your present job in light of your career expectation.	○	○	○	○

Please rate the extent to which you agree with the following statements.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
My workload is tolerable.	○	○	○	○	○
My work tasks are manageable.	○	○	○	○	○
I am able to get my required work done.	○	○	○	○	○
After work, I have enough energy for my leisure activities.	○	○	○	○	○
After work, I need long periods of rest.	○	○	○	○	○

Do you intend for LEGO Education Solutions to be used in physical classrooms, or do you intend for them to be sent home with students to use virtually? Please select the option that most closely describes your situation.

My district plans to use them in the physical classrooms

My district plans to send them home with students

My district plans to both use them in the physical classrooms and send them home with students

How do you intend to incorporate these LEGO Education Solutions into your curriculum? For what do you intend to use these LEGO Education Solutions? Please describe in the space provided.

Which of the following best describes where you are in the process of receiving, distributing, and using these LEGO Education Solutions?

We have received them but have not yet begun to distribute them.

We have distributed them to the schools, but the schools have not yet distributed them to the classrooms/students.

We have distributed them to the schools. Some of the schools have begun to distribute them to the classrooms/students.

We have distributed them to the schools and the schools have distributed them to the classrooms/students, but the students have not yet begun using this resource.

We have distributed them to the schools and the schools have distributed them to the classrooms/students, and the students have begun using this resource.

We have not yet received our LEGO Education Solutions.

ADMINISTRATOR POST-SURVEY

Thank you so much for taking the time to participate in our survey! We hope you are in good health and are managing as well as possible during these challenging times. Completing this survey is one of the final elements remaining in your grant commitment that enabled your district to receive the gift of LEGOEducation Solutions and Intel devices. We realize there are many things competing for your time now, and we are therefore extra appreciative for your participation in this brief survey.

Please note that First Book will not share your individual data with anyone outside of First Book. All of your responses are completely confidential and will never be associated with your name. Please do your best to reply honestly where you feel comfortable. We appreciate your thoughtfulness and candor!

Before we begin, please select which of the following donations your district received:

LEGO Education Solutions
Chromebooks or Windows PCs
A stipend to support internet access in your community

The following questions ask about your experience with the donation of LEGO Education Solutions. Weare asking you these questions in an effort to understand if and how this infusion of LEGO Education Solutions impacted your district and you as an administrator. To this end, you will notice that the questions that follow ask about a wide range of topics and measures that are commonly used in educational research.

As a reminder, all of your responses are completely confidential and will never be associated with your name. Please do your best to reply honestly where you feel comfortable.

Before we begin, please tell us the district you work for.

Your district (insert name):

Please enter your name and email in the space below. (It will not be used to identify your responses in any way and will not be shared outside of First Book.)

Your name (first and last):

Your email (the email associated with your First Book account):

Which best describes your experience with LEGO Education Solutions?

I am not aware of a gift of LEGO Education Solutions to our district.

Our district received LEGO Education Solutions but have not yet had the opportunity to distribute them.

Our district received the LEGO Education Solutions and distributed them to our STEM coordinators, educators and/or classrooms.

Our district received the LEGO Education Solutions and distributed them to our students directly for use during virtual learning.

Approximately how many schools in your district received LEGO Education Solutions?

Please list the schools in your district that received LEGO Education Solutions or had students that received the LEGO Education Solutions:

Approximately how many students across your district received LEGO Education Solutions?

How did your district use LEGO Education Solutions? Please select the option that most closely describes your situation.

My district used them in their physical classrooms.

My district sent them home with my students.

My district used them both in the physical classroom and sent them home with my students.

I'm not sure.

Other (please briefly describe)

To what extent did you feel involved in helping your teachers use these LEGO Education Solutions?

Not at all involved

Slightly involved

Moderately involved

Very involved

How often did your educators incorporate use of LEGO Education Solutions in its curriculum and/or assignments?

Never

Once a month

Multiple times a month

Once a week

Multiple times per week

They have not yet incorporated them in curriculum/assignments, but intend to do so

I don't know

Did you personally, or did anyone from your district, participate in the First Book/LEGO Education Professional Development (PD) training?

Yes, I personally participated in the LEGO PD.

I did not personally participate in the PD, but I believe others in my district participated in LEGO's PD.

No, neither I nor anyone in my district participated in the LEGO PD to my knowledge.

I did not personally participate in the LEGO PD, and I'm not sure if others in my district did or not.

How did you use these LEGO Education Solutions? Please describe in the space provided.

Which of the following grade levels/age groups used the LEGO Education Solutions? Select all that apply.

Early Childhood (ages 0-2)

Preschool (ages 3-4)

Elementary School (ages 5-10)

Middle School (ages 11-13)

High School (ages 14-18)

Consider the impact LEGO Education Solutions has had on your work, then respond to the following prompts.

As a result of my district having access to these LEGO Education Solutions...

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly	N/A
I plan to allocate more STEM/STEAM content into our district's curriculum.	○	○	○	○	○	○
I plan to focus more time and energy toward launching STEM/STEAM initiatives in our district.	○	○	○	○	○	○
I plan to find additional financial resources to launch STEM/STEAM initiatives in our district.	○	○	○	○	○	○
our district is in a better position to achieve our academic standards.	○	○	○	○	○	○
our district is in a better position to achieve our strategic planning goals.	○	○	○	○	○	○
I am even more confident in my students' abilities to reach their full learning potential.	○	○	○	○	○	○

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly	N/A
I believe my students can handle more challenging tasks now than they could before.	○	○	○	○	○	○

To what extent has this gift of LEGO Education Solutions helped you to...

	To a large extent	To a moderate extent	To a small extent	Not at all	N/A
increase media attention or press for your district.	○	○	○	○	○
advance the reputation of your district.	○	○	○	○	○
raise awareness of the need in your community.	○	○	○	○	○
develop new partnerships to launch additional STEM/STEAM programming.	○	○	○	○	○
secure additional funding for STEM/STEAM initiatives.	○	○	○	○	○

	To a large extent	To a moderate extent	To a small extent	Not at all	N/A
feel hopeful about your ability to advance educational equity.	○	○	○	○	○
	To a large extent	To a moderate extent	To a small extent	Not at all	N/A
provide high quality educational experiences that are on par with high-income districts	○	○	○	○	○
feel more committed to your district's mission.	○	○	○	○	○
feel proud of your district.	○	○	○	○	○
want to share the work you're doing with others.	○	○	○	○	○
feel less burnt out.	○	○	○	○	○
feel more energized at work.	○	○	○	○	○
	To a large extent	To a moderate extent	To a small extent	Not at all	N/A
feel more supported by your administration.	○	○	○	○	○

	To a large extent	To a moderate extent	To a small extent	Not at all	N/A
feel hopeful about the difference your district can make for the children you serve.	○	○	○	○	○
believe you can make a significant difference in the lives of the educators you support.	○	○	○	○	○
be more confident in your ability to serve the educators in your district.	○	○	○	○	○

First Book would like to learn more about the lives and experiences of those who work with kids in need, directly or indirectly, on a regular basis. To this end, the following questions ask about your self-perceptions and professional goals in your current role, whether it's supporting students directly or through the teachers/staff you support. Some of these questions may appear unrelated to resources available in your school/district, but First Book is trying to understand what impact, if any, having resources like LEGO Education Solutions had on your job satisfaction and other measures. We really appreciate your honest answers.

Take a moment to reflect on how you think about yourself now, in your current role supporting teachers. Then read each statement carefully and indicate how strongly you agree with each statement.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I feel that I am making a significant difference in the lives of the teachers I support.	○	○	○	○	○
I believe my support helps motivate teachers to be the best teachers they can be.	○	○	○	○	○
Most of a teacher's motivation depends on their personal situations, so I have limited influence.	○	○	○	○	○
There is a limited amount that I can do to raise the basic performance level or engagement of the teachers I serve.	○	○	○	○	○
I am successful with the teachers I serve.	○	○	○	○	○
I am uncertain how to support some of my teachers.	○	○	○	○	○
I feel the teachers I work with value my support.	○	○	○	○	○
My teachers' peers influence their motivation more than I do.	○	○	○	○	○

Please rate the extent to which you agree with the following statements.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
My workload is tolerable.	○	○	○	○	○
My work tasks are manageable.	○	○	○	○	○
I am able to get my required work done.	○	○	○	○	○
After work, I have enough energy for my leisure activities.	○	○	○	○	○
After work, I need long periods of rest.	○	○	○	○	○

Please rate the extent to which you agree with each statement in regard to your professional role working in education.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I enjoy discussing my work with people outside it.	○	○	○	○	○

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I really feel as if my district's problems are my own.	○	○	○	○	○
I do not feel like "part of the family" at work.	○	○	○	○	○
I feel emotionally attached to my job.	○	○	○	○	○
My job has a great deal of personal meaning for me.	○	○	○	○	○

How satisfied are you with:

	Very satisfied	Satisfied	Dissatisfied	Very dissatisfied
your present job when you compare it to jobs in other organizations.	○	○	○	○
the progress you are making toward the goals you set for yourself in your present position.	○	○	○	○
the chance your job gives you to do what you are best at.	○	○	○	○

	Very satisfied	Satisfied	Dissatisfied	Very dissatisfied
your present job when you consider the expectations you had when you took the job.	○	○	○	○
your present job in light of your career expectation.	○	○	○	○

Are there any other resources that First Book or LEGO could have provided to make this experience more seamless or valuable to you and/or your district? Please describe in the space provided.

In a few sentences, please describe the impact this gift of LEGO Education Solutions has had on your district and the students you serve.

PRACTITIONER PRE-SURVEY

Thank you so much for taking the time to participate in our survey! As you may know, First Book is a nonprofit organization focused on providing equal access to quality education for children in need, and as part of our work, we provide free and low-cost books and resources to educators and programs working in underserved communities. Through involvement with First Book, your district has been selected to receive LEGO Education Solutions to share with the children you serve.

We are sending you this pre-survey in an effort to understand if and how this infusion of LEGO Education Solutions will impact your school, you as a practitioner, and the kids you serve. We want to get as comprehensive and precise an understanding of your current state as possible before your kits arrive or in your early use of your kits. To this end, you will notice that the questions that follow ask about a wide range of topics and measures that are commonly used in educational research. We greatly appreciate your participation.

Please note that this survey is voluntary. First Book will not share your individual data with anyone outside of First Book. All of your responses are completely confidential and will never be associated with your name. Please do your best to reply honestly where you feel comfortable

.

We appreciate your thoughtfulness and candor!

Before we begin, please tell us a bit about your role and the school you work for.

Your school name:

Which of the following best describes your job title?

Teacher

Paraprofessional

Librarian/Media Specialist

Reading Specialist

Volunteer

School Support Personnel

Other (please describe)

When you teach STEAM/STEM, is this teaching geared toward...(please select all that apply)

Students in general education classes

Students with special needs

English language learners

Students in gifted & talented programming

Students participating in afterschool activities or programming

Students in a specialized STEAM/STEM-focused class (science, technology, engineering, arts, math)

Students involved in the school's extracurricular offerings (e.g., homework help, tutoring)

All of the above

Which of the following grade levels/age groups best describe the students you serve? (Select all that apply)

Early Childhood (ages 0-2)

Preschool (ages 3-4)

Elementary School (ages 5-10)

Middle School (ages 11-13)

High School (ages 14-18)

Which of the following best describes the location of your school/program?

Urban

Suburban

Rural

Indian Reservation/Tribal nation

Military base

To the best of your knowledge, will you be receiving LEGO Education Solutions for use with your students?

Yes

No

I'm not sure

First Book would like to follow up with you at a later date, to see how the gift of LEGO Education Solutions you received impacted you, your classroom, your school, and the kids you serve. Please enter your name and email in the space below so we can send you a follow-up survey in the next few months. Your email will only be used to send you a follow-up survey. It will not be used to identify your responses in any way and will not be shared outside of First Book.

Your name (first and last):

Your email:

First Book would like to learn more about the lives and experiences of your students. The following questions ask about your perceptions of your students at this moment in time. Some of these questions may appear unrelated to resources in your class, but First Book is trying to understand what impact, if any, having resources like LEGO Education Solutions could have on your students' character strengths and other measures. **Please note: When we talk about your "students" in the questions throughout this survey, we are specifically asking about the group of students who will be using the LEGO Education Solutions.**

Below are a number of statements that may or may not apply to your students who received LEGO Education Solutions. Please rate each statement on the scale provided.

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students
My students stick with a project or activity for more than a few weeks.	○	○	○	○
My students stay committed to goals even if they took a long time to complete.	○	○	○	○
My students finish whatever they start.	○	○	○	○
My students try very hard even if they fail.	○	○	○	○
My students keep working hard even if they feel like quitting.	○	○	○	○

Please rate each statement on the scale provided.

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students
My students get so absorbed in learning that they lose track of time.	○	○	○	○
My students can get new ideas or change their minds based on conversations with other people.	○	○	○	○
My students take the initiative to learn more about their personal interests.	○	○	○	○
When my students don't know the answer to a question, they can't rest until they figure it out.	○	○	○	○
My students explore a completely new idea or topic—just for the fun of it.	○	○	○	○

Please rate each statement on the scale provided.

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students	Not true for any of my students
Students think up solutions and ideas stemming from a great imagination.	○	○	○	○	○
Students know how to end stories and narrations with originality.	○	○	○	○	○

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students	Not true for any of my students
Students are able to provide uncommon and intelligent ideas and solutions to topics and problems presented in class.	○	○	○	○	○
Students drawings and artwork show originality.	○	○	○	○	○
Students show a preference for activities that require them to investigate, experiment, and discover information.	○	○	○	○	○
Students show curiosity about new topics.	○	○	○	○	○
Students imagine and manipulate ideas in a spontaneous way.	○	○	○	○	○
Students seem comfortable in free or not very structured class activities in which the initiative of the students determines the plan to follow.	○	○	○	○	○

Using the scale provided, please indicate how many of your students are able to perform the following creative tasks. For acts that they have not specifically done, estimate your students' creative potential based on performance of similar tasks.

	True for all of students	True for most of my students	True for some of my students	True for a few of my students	Not true for any of my students
Building something mechanical (like a robot)	○	○	○	○	○
Taking apart machines and figuring out how they work	○	○	○	○	○
Writing a computer program	○	○	○	○	○
Helping to carry out or design a scientific experiment	○	○	○	○	○
Solving a math problem	○	○	○	○	○

Please rate each statement on the scale provided.

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students	Not true for any of my students
In my class, students work as hard as they can.	○	○	○	○	○
When working on class/program work, students appear involved.	○	○	○	○	○

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students	Not true for any of my students
When I explain new material, students listen carefully.	○	○	○	○	○
In my class/program, students do more than required.	○	○	○	○	○
When students don't do well, they work harder.	○	○	○	○	○
In my class/program, students are enthusiastic.	○	○	○	○	○
In my class/program, students appear happy.	○	○	○	○	○
When we start something new in class/program, students are interested.	○	○	○	○	○
When working on class/program work, students seem to enjoy it.	○	○	○	○	○
For my students, learning seems to be fun.	○	○	○	○	○

Please rate each statement on the scale provided.

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students	Not true for any of my students
My students respect peers' opinions.	○	○	○	○	○
My students are adaptable in teams.	○	○	○	○	○
My students acknowledge peers' accomplishments.	○	○	○	○	○
My students contribute to team goals.	○	○	○	○	○
My students take others' interests into account.	○	○	○	○	○
My students value different perspectives.	○	○	○	○	○

Please indicate how often your students currently display each of the following behaviors.
Again, these prompts are referring to the group of students who will be receiving the LEGO Education Solutions.

	Usually	Sometimes	Rarely
My students believe that they can solve a problem no matter how hard it is.	○	○	○

	Usually	Sometimes	Rarely
My students try things that look too hard.	○	○	○
My students achieve what they set out to do.	○	○	○
My students are certain of their ability to be successful.	○	○	○
Failing at something just makes my students try harder.	○	○	○
When problems come up, my students face them.	○	○	○
My students have a lot of self-confidence.	○	○	○
My students believe that, "if at first you don't succeed, try, try again."	○	○	○
My students feel sure of themselves when they run into problems.	○	○	○

First Book would like to learn more about the lives and experiences of educators and practitioners, like you, who work with kids in need on a regular basis. To this end, the following questions ask about your self-perceptions and professional goals in your current role. Some of these questions may appear unrelated to resources in your class, but First Book is trying to understand what impact, if any, having resources like LEGO Education Solutions could have on your job satisfaction and other measures. We appreciate your confidential and honest answers.

Take a moment to reflect on how you think about yourself now, in your current role working with kids. Then read each statement carefully and indicate how strongly you agree with each statement.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I feel that I am making a significant difference in the lives of the students I serve.	○	○	○	○	○
If I try really hard I can get through to even the most unmotivated students.	○	○	○	○	○
Most of a student's motivation to learn depends on their home environment, so I have limited influence.	○	○	○	○	○
There is a limited amount that I can do to raise the basic performance level or engagement of the students I serve.	○	○	○	○	○
I am successful with the students I serve.	○	○	○	○	○
I am uncertain how to teach/support some of my students.	○	○	○	○	○

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I feel as though some of my students are not making any academic or programmatic progress.	○	○	○	○	○
My students peers influence their motivation more than I do.	○	○	○	○	○

Please rate the extent to which you agree with the following statements regarding the integration of STEM/STEAM into your daily work.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I am confident integrating STEM/STEAM content into my lesson/program plans.	○	○	○	○	○
I would like to integrate more STEM/STEAM content into my lesson/program plans.	○	○	○	○	○
I want to learn more about how to integrate STEM/STEAM activities into my lesson/program plans.	○	○	○	○	○

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
It will be easy for me to add STEM/STEAM activities into my lesson plans without major changes to my curriculum.	○	○	○	○	○
I struggle to find relevant content when trying to incorporate STEM/STEAM into my lesson plans.	○	○	○	○	○
I struggle to find relevant contexts for incorporating STEM/STEAM into my lesson plans.	○	○	○	○	○

Please rate the extent to which you agree with the following statements.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
My workload is tolerable.	○	○	○	○	○
My work tasks are manageable.	○	○	○	○	○
I am able to get my required work done.	○	○	○	○	○
After work, I have enough energy for my leisure activities.	○	○	○	○	○

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
After work, I need long periods of rest.	○	○	○	○	○

Please rate the extent to which you agree with each statement in regard to your professional role working with children.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I enjoy discussing my work with people outside it.	○	○	○	○	○
I really feel as if my school's problems are my own.	○	○	○	○	○
I do not feel like "part of the family" at work.	○	○	○	○	○
I feel emotionally attached to my job.	○	○	○	○	○
My school has a great deal of personal meaning for me.	○	○	○	○	○

How satisfied are you with:

	Very satisfied	Satisfied	Dissatisfied	Very dissatisfied
your present job when you compare it to other jobs you've had.	○	○	○	○
the progress you are making toward the goals you set for yourself in your present position.	○	○	○	○
the chance your job gives you to do what you are best at.	○	○	○	○
your present job when you consider the expectations you had when you took the job.	○	○	○	○
your present job in light of your career expectations.	○	○	○	○

Please respond to the following prompts.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
The amount of contact I have with my students' parents/caregivers is satisfactory.	○	○	○	○	○

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
Overall, my working relationship with my students' parents/caregivers is constructive.	○	○	○	○	○

Do you intend to use the LEGO Education Solutions in your physical classroom, or do you intend to send them home with your students to use virtually?

I plan to use them in my physical classroom.

I plan to send them home with my students.

I plan to use them both in my physical classroom and send them home with my students.

How do you intend to incorporate these LEGO Education Solutions into your curriculum? Please describe in the space provided.

Which of the following best describes where you are in the process of receiving, distributing, and using these LEGO Education Solutions? Please select the option that most closely describes your situation.

I am aware that they will be coming but have not received them yet.

I have received them but have not yet distributed them to my students.

I have distributed them to my students but have not yet begun using this resource.

I have begun using this resource with my students.

PRACTITIONER POST-SURVEY

Thank you so much for taking the time to participate in our post-survey! This survey is the second and final survey that you will be asked to fill out related to the gift of LEGO Education Solutions that your school/district received earlier in this school year.

We are sending you this post-survey in an effort to understand if and how this infusion of LEGO Education Solutions impacted your school, you as a practitioner, and the kids you serve. To this end, you will notice that the questions that follow ask about a wide range of topics and measures that are commonly used in educational research.

Please note that this survey is voluntary. First Book will not share your individual data with anyone outside of First Book. All of your responses are completely confidential and will never be associated with your name. Please do your best to reply honestly where you feel comfortable.

We appreciate your thoughtfulness and candor!

Before we begin, please tell us the school you work for.

Your school name:

Please enter your name and email in the space below. (It will not be used to identify your responses in any way and will not be shared outside of First Book.)

Your name (first and last):

Your email (please use the email associated with your First Book account):

Which of the following best describes your experience with LEGO Education Solutions?

I don't know what LEGO Education Solutions are, and/or I never received them.

I received LEGO Education Solutions but have not yet had the opportunity to utilize them.

I received the LEGO Education Solutions and have been using them with my students in my classroom/school.

I received the LEGO Education Solutions and distributed them/made them available to my students for use at home during distance learning.

I received the LEGO Education Solutions and have used them both in school and have sent them home with students to enhance their distance learning experience.

Approximately how many students in your class had the opportunity to use LEGO Education Solutions?

To what extent did you feel involved in helping your students use these LEGO Education Solutions?

Very involved

Moderately involved

Slightly involved

Not at all involved

How often did you incorporate use of LEGO Education Solutions in your curriculum and/or assignments?

Never

Once a month

Multiple times a month

Once a week

Multiple times per week

I have not yet had the opportunity to incorporate the use of LEGO Education Solutions in my curriculum/assignments but intend to do so.

Did you personally participate in the First Book/LEGO Education Professional Development?

Yes

No

Not sure

How did you use these LEGO Education Solutions? Please describe in detail using the space provided.

Which of the following describes the students you used your LEGOs with? Please select all that apply.

Students in general education classes

Students with special needs

English language learners

Students in gifted & talented programming

Students participating in afterschool activities or programming

Students in a specialized STEAM/STEM-focused class (science, technology, engineering, arts, math)

Students involved in the school's extracurricular offerings (e.g., homework help, tutoring)

Other (please describe)

All of the above

Which of the following grade levels/age groups used the LEGO Education Solutions? (Select all that apply.)

Early Childhood (ages 0-2)

Preschool (ages 3-4)

Elementary School (ages 5-10)

Middle School (ages 11-13)

High School (ages 14-18)

As we mentioned above, First Book would like to understand if and how this infusion of LEGO Education Solutions impacted your school, you as a practitioner, and the students you serve. The next several pages will ask about exactly that!

To what extend have the LEGO Education Solutions helped your students to...

	To a large extent	To a moderate extent	To a small extent	Not at all	Not applicable
not be easily discouraged by setbacks.	○	○	○	○	○
finish the activities they began.	○	○	○	○	○

	To a large extent	To a moderate extent	To a small extent	Not at all	Not applicable
become more curious.	○	○	○	○	○
get inspired to explore a new idea or topic.	○	○	○	○	○
take the initiative to learn more about one of their interests.	○	○	○	○	○
express creativity.	○	○	○	○	○
think of different ways to solve problems.	○	○	○	○	○

	To a large extent	To a moderate extent	To a small extent	Not at all	Not applicable
develop a playful attitude toward learning.	○	○	○	○	○
make decisions that take them outside their comfort zone.	○	○	○	○	○
improve their confidence in their abilities.	○	○	○	○	○
see themselves as learners.	○	○	○	○	○

	To a large extent	To a moderate extent	To a small extent	Not at all	Not applicable
embrace or approach problems or activities that look challenging.	○	○	○	○	○
believe challenges can make them smarter.	○	○	○	○	○
increase their engagement in school.	○	○	○	○	○

	To a large extent	To a moderate extent	To a small extent	Not at all	Not applicable
improve attendance in class (in-person or virtual).	○	○	○	○	○
improve their academic performance.	○	○	○	○	○
improve their ability to work well with others.	○	○	○	○	○
value other students' perspectives.	○	○	○	○	○
become more adaptable in teams.	○	○	○	○	○

To what extent have the LEGO Education Solutions helped your students to...

	To a large extent	To a moderate extent	To a small extent	Not at all	Not applicable
develop career aspirations.	○	○	○	○	○
spark interest in STEM/STEAM careers.	○	○	○	○	○
take a greater interest in their studies.	○	○	○	○	○
improve their academic performance.	○	○	○	○	○
find creative solutions to problems.	○	○	○	○	○
develop knowledge about STEM/STEAM topics.	○	○	○	○	○
improve their problem-solving abilities.	○	○	○	○	○
improve their motor skills.	○	○	○	○	○
improve their critical thinking skills.	○	○	○	○	○

As a result of having access to these LEGO Educations Solutions, my students are more able to...

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
build something mechanical (like a robot) than before they had LEGO Education Solutions.	○	○	○	○	○
take apart machines and figure out how they work than before they had LEGO Education Solutions.	○	○	○	○	○
solve a math problem more efficiently than before they had LEGO Education Solutions.	○	○	○	○	○

As a result of having access to these LEGO Educations Solutions...

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I have increased my own knowledge of STEM/STEAM topics.	○	○	○	○	○
I plan to integrate STEM/STEAM into my curriculum to a greater degree than before.	○	○	○	○	○
I believe STEM/STEAM activities offer a fun way for students to learn.	○	○	○	○	○

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I realize the importance of STEM/STEAM learning more than I did before.	○	○	○	○	○
I am more comfortable teaching STEM/STEAM topics in my classroom than I was before.	○	○	○	○	○
I am excited to integrate STEM/STEAM topics in my curriculum in the future.	○	○	○	○	○

To what extent have the LEGO Education Solutions helped you to...

	To a large extent	To a moderate extent	To a small extent	Not at all	Not applicable
integrate STEM/STEAM content in my curriculum.	○	○	○	○	○
engage parents and families.	○	○	○	○	○
provide parents and caregivers access to the tools they need to support student learning.	○	○	○	○	○

	To a large extent	To a moderate extent	To a small extent	Not at all	Not applicable
provide parents/caregivers with support to help them further the education of my students.	○	○	○	○	○
have more regular communication with parents/caregivers.	○	○	○	○	○
give parents/caregivers a better sense of what their children are learning in school.	○	○	○	○	○
feel more committed to your school's mission.	○	○	○	○	○
be proud of your school.	○	○	○	○	○
want to share the work you're doing with others.	○	○	○	○	○
feel more energized at work.	○	○	○	○	○
feel more supported by your administration.	○	○	○	○	○
feel more satisfied at work.	○	○	○	○	○
remember why you do this work.	○	○	○	○	○

	To a large extent	To a moderate extent	To a small extent	Not at all	Not applicable
feel hopeful about the difference you can make for the children you serve.	○	○	○	○	○

First Book would like to learn more about the lives and experiences of your students. The following questions ask about your perceptions of your students at this moment in time. Some of these questions may appear unrelated to resources in your class, but First Book is trying to understand what impact, if any, having resources like LEGO Education Solutions had on your students' character strengths and other measures. **Please note: When we talk about your "students" in the questions throughout this survey, we are specifically asking about the group of students who used the LEGO Education Solutions.**

Below are a number of statements that may or may not apply to your students who received LEGO Education Solutions. Please rate each statement on the scale provided.

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students	N f o s
My students stick with a project or activity for more than a few weeks.	○	○	○	○	
My students stay committed to goals even if they took a long time to complete.	○	○	○	○	

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students	N f o s
My students finish whatever they start.	○	○	○	○	
My students try very hard even if they fail.	○	○	○	○	
My students keep working hard even if they feel like quitting.	○	○	○	○	

Please rate each statement on the scale provided.

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students	N fc o st
My students get so absorbed in learning that they lose track of time.	○	○	○	○	
My students can get new ideas or change their minds based on conversations with other people.	○	○	○	○	
My students take the initiative to learn more about their personal interests.	○	○	○	○	
When my students don't know the answer to a question, they can't rest until they figure it out.	○	○	○	○	
My students explore a completely new idea or topic—just for the fun of it.	○	○	○	○	

Please rate each statement on the scale provided.

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students	Not true for any of my students
Students think up solutions and ideas stemming from a great imagination.	○	○	○	○	○
Students know how to end stories and narrations with originality.	○	○	○	○	○
Students are able to provide uncommon and intelligent ideas and solutions to topics and problems presented in class.	○	○	○	○	○
Students drawings and artwork show originality.	○	○	○	○	○
Students show a preference for activities that require them to investigate, experiment, and discover information.	○	○	○	○	○
Students show curiosity about new topics.	○	○	○	○	○
Students imagine and manipulate ideas in a spontaneous way.	○	○	○	○	○

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students	Not true for any of my students
Students seem comfortable in free or not very structured class activities in which the initiative of the students determines the plan to follow.	○	○	○	○	○

Using the scale provided, please indicate how many of your students are able to perform the following creative tasks. For acts that they have not specifically done, estimate your students' creative potential based on performance of similar tasks.

	True for all of students	True for most of my students	True for some of my students	True for a few of my students	Not true for any of my students
Building something mechanical (like a robot)	○	○	○	○	○
Taking apart machines and figuring out how they work	○	○	○	○	○
Writing a computer program	○	○	○	○	○
Helping to carry out or design a scientific experiment	○	○	○	○	○
Solving a math problem	○	○	○	○	○

Please rate each statement on the scale provided.

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students	Not true for any of my students
In my class, students work as hard as they can.	○	○	○	○	○
When working on class/program work, students appear involved.	○	○	○	○	○
When I explain new material, students listen carefully.	○	○	○	○	○
In my class/program, students do more than required.	○	○	○	○	○
When students don't do well, they work harder.	○	○	○	○	○
In my class/program, students are enthusiastic.	○	○	○	○	○
In my class/program, students appear happy.	○	○	○	○	○

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students	Not true for any of my students
When we start something new in class/program, students are interested.	○	○	○	○	○
When working on class/program work, students seem to enjoy it.	○	○	○	○	○
For my students, learning seems to be fun.	○	○	○	○	○

Please rate each statement on the scale provided.

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students	Not true for any of my students
My students respect peers' opinions.	○	○	○	○	○
My students are adaptable in teams.	○	○	○	○	○
My students acknowledge peers' accomplishments.	○	○	○	○	○

	True for all of my students	True for most of my students	True for some of my students	True for a few of my students	Not true for any of my students
My students contribute to team goals.	○	○	○	○	○
My students take others' interests into account.	○	○	○	○	○
My students value different perspectives.	○	○	○	○	○

The following question asks you how often your students display certain behaviors. For this question, we ask that you answer the best you can based on your perceptions and experiences with your students, while considering where the majority of your classroom ranks, not individual students.

Based on your experiences and perceptions, please indicate how often the majority of your students display each of the following behaviors. **Again, these prompts are referring to the group of students who will be receiving the LEGO Education Solutions.**

	Usually	Sometimes	Rarely
My students believe that they can solve a problem no matter how hard it is.	○	○	○
My students try things that look too hard.	○	○	○
My students achieve what they set out to do.	○	○	○

	Usually	Sometimes	Rarely
My students are certain of their ability to be successful.	○	○	○
Failing at something just makes my students try harder.	○	○	○
When problems come up, my students face them.	○	○	○
My students have a lot of self-confidence.	○	○	○
My students believe that, "if at first you don't succeed, try, try again."	○	○	○
My students feel sure of themselves when they run into problems.	○	○	○

First Book would like to learn more about the lives and experiences of educators and practitioners, like you, who work with kids in need on a regular basis. To this end, the following questions ask about your self-perceptions and professional goals in your current role. Some of these questions may appear unrelated to resources in your class, but First Book is trying to understand what impact, if any, having resources like LEGO Education Solutions had on your job satisfaction and other measures. We appreciate your confidential and honest answers.

Take a moment to reflect on how you think about yourself now, in your current role working with kids. Then read each statement carefully and indicate how strongly you agree with each statement.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I feel that I am making a significant difference in the lives of the students I serve.	○	○	○	○	○
If I try really hard, I can get through to even the most unmotivated students.	○	○	○	○	○
Most of a student's motivation to learn depends on their home environment, so I have limited influence.	○	○	○	○	○
There is a limited amount that I can do to raise the basic performance level or engagement of the students I serve.	○	○	○	○	○
I am successful with the students I serve.	○	○	○	○	○
I am uncertain how to teach/support some of my students.	○	○	○	○	○
I feel as though some of my students are not making any academic or programmatic progress.	○	○	○	○	○

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
My students peers influence their motivation more than I do.	○	○	○	○	○

Please rate the extent to which you agree with the following statements regarding the integration of STEM/STEAM into your daily work.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I am confident integrating STEM/STEAM content into my lesson/program plans.	○	○	○	○	○
I would like to integrate more STEM/STEAM content into my lesson/program plans.	○	○	○	○	○
I want to learn more about how to integrate STEM/STEAM activities into my lesson/program plans.	○	○	○	○	○
It will be easy for me to add STEM/STEAM activities into my lesson plans without major changes to my curriculum.	○	○	○	○	○

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I struggle to find relevant content when trying to incorporate STEM/STEAM into my lesson plans.	○	○	○	○	○
I struggle to find relevant contexts for incorporating STEM/STEAM into my lesson plans.	○	○	○	○	○

Please rate the extent to which you agree with the following statements.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
My workload is tolerable.	○	○	○	○	○
My work tasks are manageable.	○	○	○	○	○
I am able to get my required work done.	○	○	○	○	○
After work, I have enough energy for my leisure activities.	○	○	○	○	○
After work, I need long periods of rest.	○	○	○	○	○

Please rate the extent to which you agree with each statement in regard to your professional role working with children.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
I enjoy discussing my work with people outside it.	○	○	○	○	○
I really feel as if my school's problems are my own.	○	○	○	○	○
I do not feel like "part of the family" at work.	○	○	○	○	○
I feel emotionally attached to my job.	○	○	○	○	○
My school has a great deal of personal meaning for me.	○	○	○	○	○

How satisfied are you with:

	Very satisfied	Satisfied	Dissatisfied	Very dissatisfied
your present job when you compare it to other jobs you've had.	○	○	○	○

	Very satisfied	Satisfied	Dissatisfied	Very dissatisfied
the progress you are making toward the goals you set for yourself in your present position.	○	○	○	○
the chance your job gives you to do what you are best at.	○	○	○	○
your present job when you consider the expectations you had when you took the job.	○	○	○	○
your present job in light of your career expectations.	○	○	○	○

Please respond to the following prompts.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
The amount of contact I have with my students' parents/caregivers is satisfactory.	○	○	○	○	○
Overall, my working relationship with my students' parents/caregivers is constructive.	○	○	○	○	○

Are there any other resources that First Book or LEGO could have provided to make this experience more seamless or valuable to you and/or your students? Please describe in the space provided.

In a few sentences, please describe the impact that this gift of LEGO Education Solutions on you and your students.

If your district had not received this grant, what would be different for your students? Please describe below.