The Impacts of KiwiCo Learning Crates on Elementary School-Aged Learners

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EXECUTIVE SUMMARY

The purpose of the present study was to investigate teachers' implementation practices and their perceived impacts and attitudes towards the use of KiwiCo learning crates with respect to student motivation, interest in STEAM, and development of 21st century learning skills. This case study utilized a mixed methods research design that administered an online survey via Qualtrics, which included Likert-type items and open-ended questions, and interviewed teachers who had used KiwiCo learning crates in their classrooms. All respondents (n = 91) taught in a single school district in the western part of the United States, which is located in a large, suburban locale and includes a total of 30 elementary schools with more than 15,000 elementary school-aged students district-wide. Teachers had varying degrees of familiarity with the learning crates, but there were two groups, specifically, that were investigated: the 2024 summer school teachers (referred to herein as "Summer" teachers) and the 2024-2025 academic school year teachers (referred to herein as "STEAM" teachers).

The findings showed that teachers responded positively towards the KiwiCo learning crates. Because of the ample resources and training opportunities, there were few barriers to implementation, and teachers noted that the kits were well-designed and easy-to-use, though their success in the classroom was highly dependent on sufficient preparation on the part of the teacher. Ideally, a learning crate would be test-built prior to implementing it with students to better anticipate learners who might struggle with tasks. Teacher respondents also stressed the importance of aligning the kits with the appropriate age groups; to help with this, some schools partnered older students with younger students to help assist with more complex projects. In conclusion, the KiwiCo learning crates have a sterling reputation with elementary school teachers, who perceive the crates to be well-designed and easy to implement. Survey and focus group data support the finding that teachers perceive the KiwiCo learning crates to improve student attitudes, motivation, interest, confidence, and the development of essential 21st century skills.

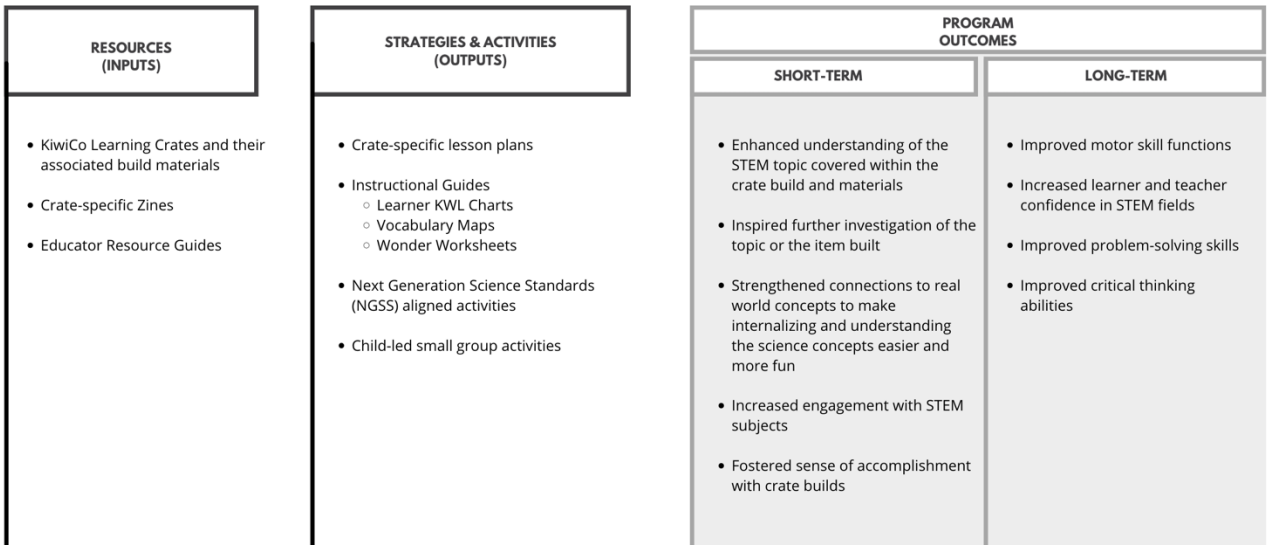
INTRODUCTION

Overview of KiwiCo Learning Crates

KiwiCo Education currently serves over 10,000 schools, after-school programs, and organizations and has shipped more than two million learning crates globally. It is a subsidiary of KiwiCo, a popular subscription service known for delivering activity-based learning crates. KiwiCo Education adds explicit instructional strategies and provides academic standard alignment on top of the original materials to bring them to the educational market. KiwiCo Education's materials are mostly screen-free and designed to support learning in diverse environments and budgets. The learning crates range from single-use projects to extended programs lasting over 100 hours. The hands-on learning program is tailored for early childhood through 12th grade students. Their instructional materials and activities are delivered directly to homes or schools and are designed to suit various learning environments and cater to all types of learners. Developed by and for educators, these materials adhere to NGSS and Common Core state standards.

The KiwiCo learning crates comprise an array of print materials and manipulatives specific to the subject matter, accompanied by educator resource guides and in-person training to support their implementation. Many of KiwiCo's learning materials adopt a discovery-based approach, encouraging creativity, sparking curiosity, and boosting motivation. Anchored in constructivist learning theory, KiwiCo Education promotes guided and inquiry-based learning, aiming to cultivate creative confidence and technical literacy in learners of all ages. This is visually represented in the logic model below (see Figure 1).

Figure 1
KiwiCo Learning Crates Logic Model



The mission of the KiwiCo Education brand is to equip the next generation of innovators with the skills and confidence needed to become creative problem-solvers and critical thinkers. As such, the purpose of this study was to demonstrate Tier 4 evidence that meets the criteria set forth by

the Every Student Succeeds Act (ESSA), which articulates the need for a strong rationale and promising research on the effects of the learning intervention. The next section describes the conditions for this study.

METHOD

Research Design

This study followed a case study design approach to investigate teachers' implementation practices and their perceived impacts and attitudes towards the use of KiwiCo learning crates with respect to student motivation, interest in STEAM, and development of 21st century learning skills. Researchers from the Center for Research and Reform in Education (CRRE) at Johns Hopkins University collaborated with KiwiCo leadership to develop an online survey instrument that was administered to teachers familiar with the learning crates. This survey was launched on December 20, 2024, and closed on January 17, 2025 (a total of 29 days). On the survey, teachers indicated whether they would like to participate in a virtual focus group, and their contact information was provided to the JHU researcher on a separate form in order to preserve confidentiality and anonymity on the survey. These teachers were then invited to participate in one of three virtual focus group sessions.

This study utilized a mixed methods research design. Quantitative data from the survey were analyzed using the Qualtrics platform, and the item-level descriptive frequencies can be found in Appendix C. Qualitative data were collected via open-ended responses on the survey and from the transcribed conversations that took place in the focus groups. These data were coded, and emerging themes are presented in this report.

The present study examined the following research questions, specifically:

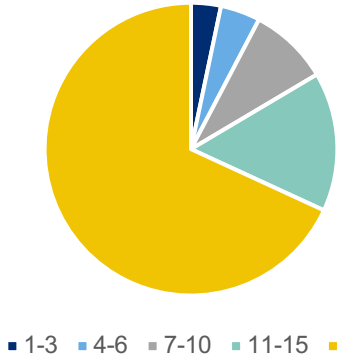
1. What are the factors that help or hinder the implementation of KiwiCo Education learning crates in the classroom?
2. Do KiwiCo Education students have a positive growth change in attitudes towards STEAM-related activities?
3. How does the use of KiwiCo Education learning crates impact student motivation and interest towards STEAM and towards STEAM careers?
4. ***Exploratory***: How does the use of KiwiCo Education learning crates impact students' 21st century learning skills?

Participants

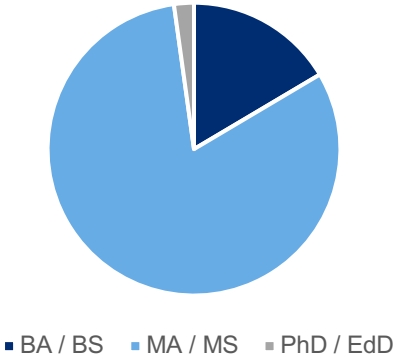
The study took place in a single school district in the western part of the United States and collected teacher input regarding the use, perceived impacts, and attitudes towards the KiwiCo learning crates. According to the National Center for Education Statistics, the participating school district is located in a large, suburban locale and includes a total of 30 elementary schools with more than 15,000 elementary school-aged students district-wide. Drawing upon this district, a total of 91 teachers participated in this study, most of whom used KiwiCo learning crates as part of their summer program (90%, *n* = 82). This demographic data of teachers were

largely homogenous, with the majority identifying as White (59%), female (92%), having earned a Master's degree (81%), and having extensive teaching experience of more than 16 years (68%), as represented in the following graphs.

Teaching Experience in Years



Highest Degree Earned



In addition to the online survey responses, virtual focus groups were held with a total of three teachers to gain further insight into the impacts of the KiwiCo learning crates that they implemented in their classrooms. These participants also were similar in terms of their racial, experience, and educational backgrounds.

Measures

In order to address the research questions, the study team designed and developed two instruments to gather and analyze teacher data related to the learning crates (see Table 1), both of which contributed to a richer understanding of each of the four research questions of interest.

Table 1
Research Questions With Corresponding Measures

Research questions	Teacher Survey	Focus Groups
1. What are the factors that help or hinder the implementation of KiwiCo Education learning crates in the classroom?	✓	✓
2. Do KiwiCo Education students have a positive growth change in attitudes towards STEAM-related activities?	✓	✓
3. How does the use of KiwiCo Education learning crates impact student motivation and interest towards STEAM and towards STEAM careers?	✓	✓
4. ***Exploratory***: How does the use of KiwiCo Education learning crates impact students' 21st century learning skills?	✓	✓

Data sources and measures for the current study included the following:

Online Teacher Survey. Researchers in the CRRE developed an online survey on the Qualtrics platform that was administered to teacher participants between the months of December 2024 and January 2025. The survey used mostly Likert-type and several open-ended items that were based on the S-STEAM survey created by the Friday Institute[1] and focused on how teachers used the learning crates, as well as their perceptions and attitudes regarding their use. Appendix A includes a copy of the survey.

Virtual Focus Groups. Researchers in the CRRE developed an interview protocol and conducted three separate virtual focus group sessions with a subsample of voluntary teacher participants. These interviews were held virtually via the Zoom platform. Appendix B includes a copy of the protocol.

Procedure

The KiwiCo learning crates were administered to the elementary schools for use during two periods: the 2024 summer school (referred to herein as "Summer" teachers) and the 2024-2025 academic school year (referred to herein as "STEAM" teachers). Prior to their use, a team of six teachers assembled four learning crates and designed math, language arts, and STEAM lessons that aligned with each crate. From here, the teachers developed accompanying materials that demonstrated how to assemble the crates and how to use them alongside the lesson plans. A full-day professional development workshop was provided to Summer teachers one week before the start of summer school. In contrast, the STEAM teachers who used the learning crates during the academic school year did not receive in-person training, only the instructional materials. There were some teachers (roughly 15) who taught both during summer school and the academic school year.

There were other differences between implementation of the learning crates in Summer and STEAM teachers' classrooms. During the summer school session, which lasted four weeks, all teachers received the same full-day training and were expected to use the crates with fidelity. This was a much more structured approach to using the learning crates compared to the STEAM teachers, who received online professional development materials only and did not teach the same learning crates at the same time. STEAM teachers used the learning crates in TK and 3rd grade classrooms, and dosage varied between the two age groups. TK students experienced three weeks of lessons related to their learning crate, and 3rd grade students experienced only two 40-minute classes.

Taken together, the differences in terms of teacher professional development and fidelity of implementation between school sessions and grade levels should be taken into account when making generalized inferences between groups of students and teachers.

[1] Friday Institute for Educational Innovation (2012). Middle and High School STEM-Student Survey. Raleigh, NC. Retrieved from https://fi.ncsu.edu/resource-library/student-attitudes-toward-stem-s-stem-survey-development-and-psychometric-properties/

RESULTS

The following section presents a detailed report of the results for each of the four research questions, highlighting the key findings from each, and providing contextualized support for data visualizations. Broadly, the research questions are categorized as (1) Implementation successes and challenges for the learning crates; (2) teachers' perceptions of student attitudes towards STEAM; (3) teachers' perceptions of student motivation and interest towards STEAM; and (4) the development of 21st century learning skills as a function of participating in the learning crate activities.

Implementation

RQ 1. What are the factors that help or hinder the implementation of KiwiCo Education learning crates in the classroom?

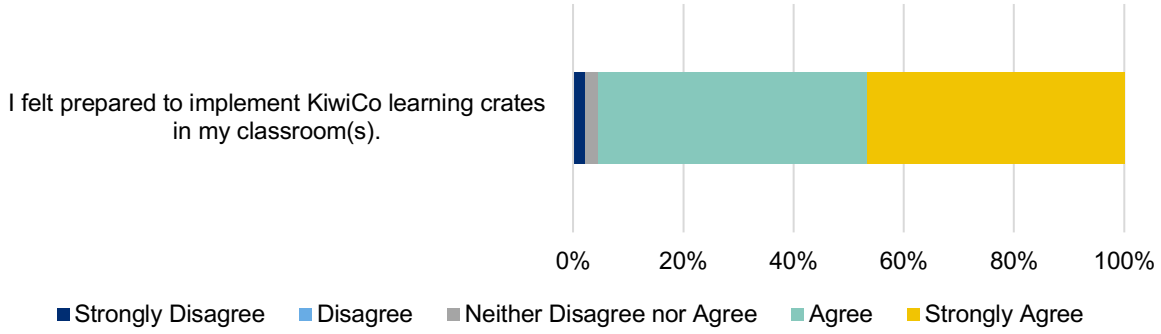
Key Findings

- Teachers used the learning crates on a regular basis and felt largely prepared to implement.
- Few barriers to implementation were reported but included a mismatch between the grade level and difficulty, a lack of time, and extensive preparation time for teachers.

Most teacher respondents reported using the learning crates either on a daily basis (49%, *n* = 44) or at least several times per week (20%, *n* = 18). For STEAM teachers (*n* = 11), however, their use was less frequent, with only one respondent indicating that they used the learning crates on a daily basis or several times per week. Of the STEAM teachers, most (55%, *n* = 6) reported their implementation of the crates as "Rarely." The discrepancy between the Summer and STEAM teachers' intensity of usage likely stemmed from the shortened summer sessions.

Teachers also indicated that they felt prepared to implement the learning crates and teach their corresponding lessons (see Figure 2). In response to the open-ended question, "How prepared did you feel to implement the KiwiCo learning crates in your classroom?" teachers credited their preparation to the organization of the materials and clear instructions for use. Two teachers noted that in order to be prepared to teach the crates, they had to build them in advance; this better prepared them to anticipate problems that students might experience.

Figure 2
Teachers' Preparedness



Note. n = 88.

Some barriers to implementation were identified by teachers. Of the 20 responses, teachers felt that some of the learning crates were too difficult for their younger grades (n = 7), that they had too little time to complete the lessons (n = 4), and that the crates required extensive prep time beforehand (n = 4). One teacher added that the learning crates needed modification to be used with students with moderate to severe disabilities, though this was not an intended learner audience.

Comments in the focus groups yielded similar findings. While teachers felt prepared to implement the learning crates in their classrooms, all respondents (n = 3) attributed this to the professional development session and district training that was attended beforehand. These activities allowed teachers to "anticipate problems and frustrations" prior to implementation. Because some of the projects were "deceivingly difficult" teachers stressed that the crates should not be implemented without first conducting a dry run of the build and meticulous preparation of the materials and pieces needed for each build. The learning crates are most successful when planning is prioritized.

Student Attitudes

RQ 2. Do KiwiCo Education students have a positive growth change in attitudes towards STEAM-related activities?

Key Finding

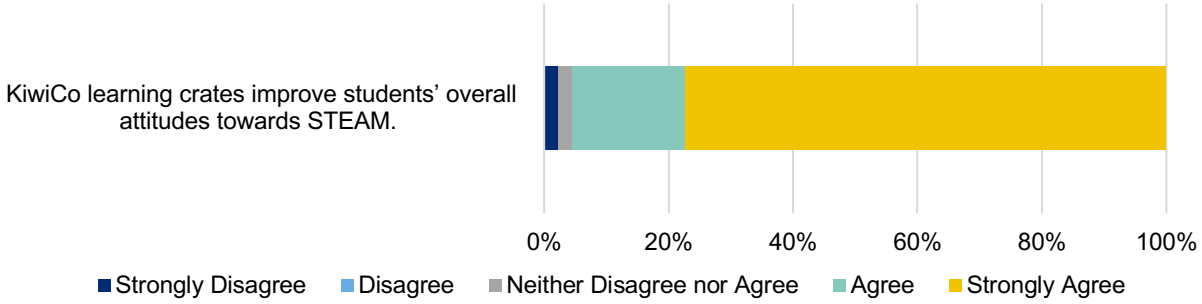
- Teachers indicated strong support that the KiwiCo learning crates improved students' attitudes towards STEAM and led to improved student achievement.

Teachers were asked whether the KiwiCo learning crates impacted student attitudes towards

STEAM-related activities. Overwhelmingly, respondents were in agreement (94%, *n* = 84) that the learning crates did, in fact, improve overall student attitudes towards STEAM (see Figure 3).

Figure 3

Teachers' Perceived Impacts on Student Attitudes



Note. *n* = 88.

Interestingly, there were only two teachers who indicated disagreement with the above statement, as it relates to students' attitudes towards STEAM. Both teachers used the learning crates in the context of the summer program. STEAM teachers, on the other hand, were in complete agreement that the crates led to improved student attitudes toward STEAM.

Furthermore, most teacher respondents (Summer and STEAM) were in agreement (either agree or strongly agree) that the learning crates led to an increase in student achievement (91%, *n* = 81). Although this study did not measure change in student performance, teachers felt confident that the learning crates contributed to achievement. One teacher commented that, "The crates help with [students'] learning perseverance. Being able to successfully create projects instills confidence in students, and that to me is achievement." Another teacher made a connection between the time management and direction-following skills that are needed to complete the learning crates and those same skills that are needed to be successful on a standardized test. Ultimately, teachers expressed uniform support that KiwiCo learning crates positively impacted student attitudes towards STEAM and likely have a positive effect on learning achievement.

Student Motivation and Interest

RQ 3. How does the use of KiwiCo Education learning crates impact student motivation and interest towards STEAM and towards STEAM careers?

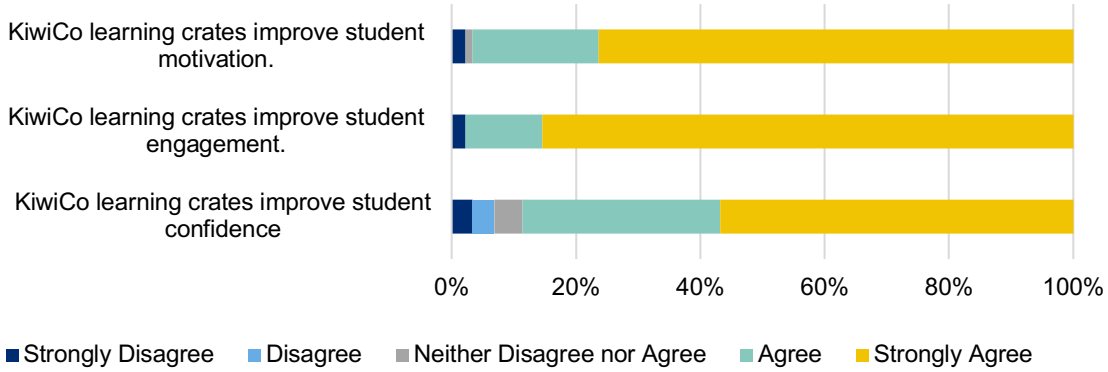
Key Finding

- Teachers had strong agreement that the KiwiCo learning crates improved student levels of motivation, interest, and confidence towards STEAM learning.

Just as with attitudes towards STEAM, teachers perceived a positive growth in students' motivation, interest, and confidence levels. Overwhelmingly, teacher respondents indicated agreement that student interaction with the KiwiCo learning crates led to improved levels of motivation (97%, *n* = 86), engagement (98%, *n* = 87), and to a somewhat lesser degree, confidence (88%, *n* = 78). Figure 4 illustrates each of these findings.

Figure 4

Teachers' Perceived Impacts on Student Motivation, Interest, and Confidence



Note. *n* = 89.

When asked to provide details on what they liked most about the learning crates, teachers cited student engagement as a key factor. Teachers who participated in the focus groups specifically recalled how the learning crates "caught the students' attention" and that "engagement was high" throughout the building process. Importantly, teachers found that when students successfully completed the project, they felt a sense of accomplishment, and this boosted their general confidence in other learning activities.

However, teachers explained that student confidence could be negatively impacted if they were not matched with an age-appropriate learning crate. According to one teacher, "Kindergarten and 1st graders are hard. They lose things. Also, some of the crates are not aligned to the age group. Some of them struggle to read the directions." And because the crates foster independent learning, some teachers found it difficult teaching large groups of younger students who might not possess the fine motor skills needed for the build. Another teacher commented, "The projects requiring fine motor skills are difficult for some kids, especially the paper-folding ones." This sometimes contributed to levels of frustration for students and teachers, despite their high levels of motivation and engagement. To avoid this, one teacher emphasized that, "You really need to know each kid's abilities."

21st Century Learning Skills

RQ 4. How does the use of KiwiCo Education learning crates impact students' 21st century learning skills?

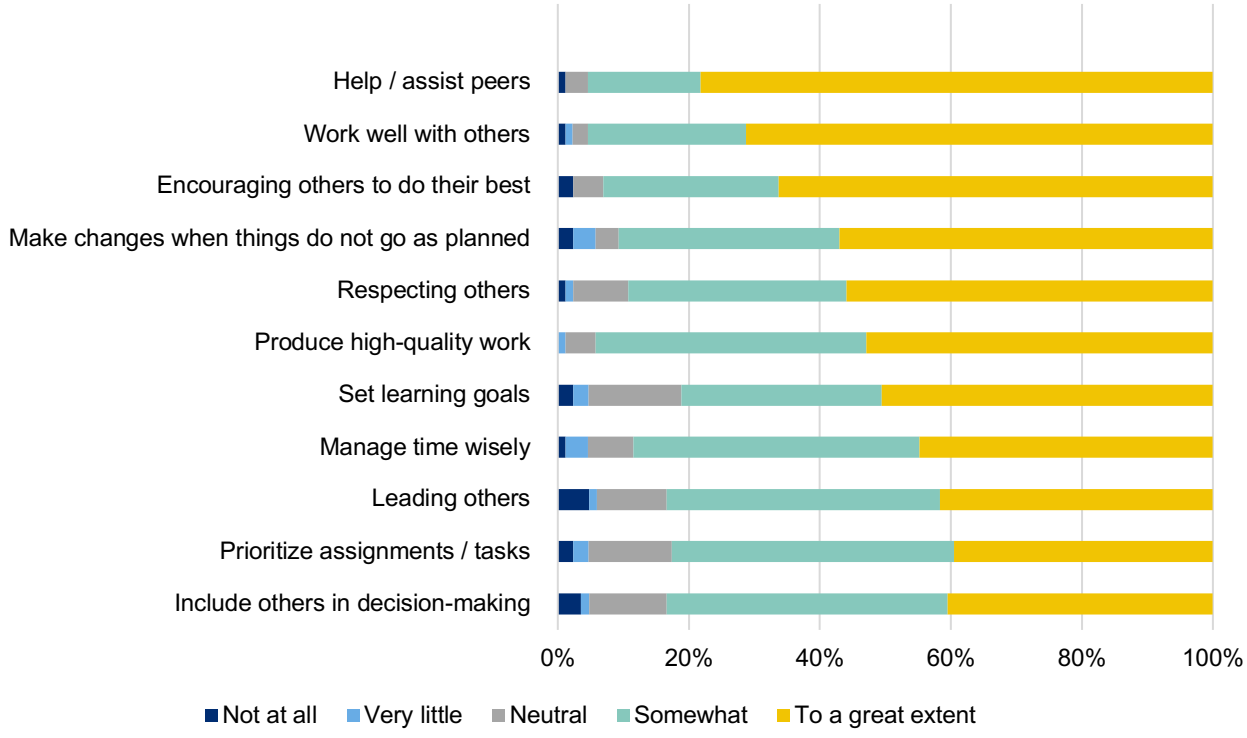
Key Finding

- Learners exhibited 21st century skills as a result of using the learning crates, particularly in the areas of helping and assisting peers and in working well with others.

An exploratory research question inquired the degree to which teachers observed 21st century skills as a result of using the learning crates in their classrooms. To measure this, we asked teachers to provide a rating for each of the skills (shown in Figure 5) that they observed, ranging from "Not at all" to "a great extent." These skills are particularly relevant to STEAM learning and center on collaboration, leadership, and peer-based learning.

Figure 5

Teachers' Perceived Impacts on 21st Century Skills



Note. n = 89.

Perhaps not surprisingly, teachers felt that the KiwiCo learning crates accentuated all the 21st century skills that they were asked about. Teachers felt strongest that the crates empowered learners to "help / assist peers" and to "work well with others" (76% and 70% of teachers observed these skills to "a great extent," respectively).

Teachers who participated in the focus groups echoed these findings. They were quick to point out that the learning crates most clearly fostered a collaborative learning environment where students exhibited strong leadership skills and worked well with one another through peer modeling. In many classrooms, older students (4th and 5th graders) were paired with younger learners (Kindergarten and 1st graders) to build crates. One teacher recalled, "We had leaders emerge. Students went peer-to-peer to show what they knew. Different projects required different skills, and that's where I saw different kids shine." Another teacher felt that the learning crates helped students respect and encourage their peers: "There were kids who wanted to give up, but their peers would help them work through [the build]. They made it happen." Summer teachers and STEAM teachers agreed that the learning crates supported key 21st century skills.

DISCUSSION

The purpose of the present study was to investigate teachers' implementation practices and their perceived impacts and attitudes towards the use of KiwiCo learning crates with respect to student motivation, interest in STEAM, and development of 21st century learning skills.

What are the factors that help or hinder the implementation of KiwiCo Education learning crates in the classroom?

As indicated by Summer and STEAM teachers' responses on the survey and in focus groups, the professional development training session and resources provided teachers with the necessary background knowledge and expectations to be able to implement the learning crates in their classrooms. Teachers were especially fond of building a test learning crate with other teachers to identify potential pitfalls for learners and to better understand an authentic student experience with the project. This was viewed as an essential preparation for other learning crates; teachers felt comfortable with implementing the learning creates in their classrooms but stressed the importance of preparation and familiarity with each learning crate before doing so. Sometimes, this extensive amount of preparation time was viewed negatively by teachers, who offered some recommendations for improvement, including a better system for packaging loose pieces according to project. Teachers also emphasized the importance of aligning the project complexity with the learners' abilities, making sure that learners have the necessary fine motor and literacy skills to be successful.

Do KiwiCo Education students have a positive growth change in attitudes towards STEAM-related activities?

Teachers were clear in their agreement that the learning crates fostered positive attitudes towards STEAM in the learners and posited that they even had a potential impact on their

achievement. Although achievement measures were not included in this study, teachers observed that many of the same skills that are required to be successful on standardized tests and other traditional measures of knowledge were also evident in KiwiCo learners.

How does the use of KiwiCo Education learning crates impact student motivation and interest towards STEAM and towards STEAM careers?

Just as the learning crates garnered student interest in STEAM-related activities, so too did they generate motivation and interest towards STEAM careers, per teacher respondents. Survey data showed teachers' perceptions that learners' levels of motivation, interest, and confidence all were improved as a result of the learning crates. One area of consideration, however, is that an individual learner's abilities must be properly aligned with the demands of each learning crate in order to inspire—not deflate—levels of confidence. In other words, it is possible for learners to become overly frustrated with a learning crate if they do not have the prerequisite skills, most notably, fine motor and literacy skills, as noted by teachers.

How does the use of KiwiCo Education learning crates impact students' 21st century learning skills?

Lastly, teachers registered their agreement with the degree to which KiwiCo learning crates helped learners exhibit 21st century skills. There was an especially strong perception among Summer and STEAM teachers that the learning crates fostered the skills of collaboration, working well with others, helping and assisting peers, and positively encouraging others to do their best. The KiwiCo learning crates had a positive impact on the classroom environment in this regard, helping to make leaders out of learners and strengthening the classroom community bond through peer interactions.

Conclusion

This study sought to understand the implementation practices of teachers and to investigate the impacts of KiwiCo learning crates on learners in a variety of contexts. A total of 91 teachers were surveyed who used the learning crates either during a shortened summer session or during an enrichment class during the school year. Of those teachers, three gave virtual interviews. The survey and focus groups specifically gathered insights into the barriers to implementation, the perceived impacts on student attitudes towards STEAM learning, student motivation and interest, and the impact on 21st century skills. In general, teachers responded positively towards the KiwiCo learning crates. In fact, most teachers indicated that they would like to continue using KiwiCo learning crates in their classrooms and would even recommend them to other teachers (94% and 97%, respectively). Because of the ample resources and training opportunities, there were few barriers to implementation. Teachers noted that the kits were well-designed, easy-to-use, though their success in the classroom was highly dependent on sufficient preparation. Ideally, a learning crate would be test-built prior to implementing it with students to better anticipate learners who might struggle with tasks. Teacher respondents stressed the importance of aligning the kits with the appropriate age groups; to help with this, some schools partnered older students with younger students to help assist with more complex

projects.

The study also solicited feedback for improving the learning crates. Many of the suggestions centered on the design of the crates; teachers commonly requested that the crates consolidate the pieces for each project into one bag rather than having multiple bags within the same build. Another suggestion was to reduce the number of extra small pieces in order to simplify the build. This was especially relevant for younger learners who were expected to work independently and who might not possess a high level of fine motor skills. Lastly, teachers requested more video tutorials to accompany each build, particularly for the harder crates (the Atlas Crate for Peru was cited specifically as an example here). Altogether, the feedback was intended to improve the design of the crates and to streamline the learning process for the younger students.

In summation, the KiwiCo learning crates have a sterling reputation with elementary school teachers, who perceive the crates to be well-designed and easy to implement. Survey and focus group data support the finding that teachers perceive the KiwiCo learning crates to improve student attitudes, motivation, interest, confidence, and the development of essential 21st century skills.

APPENDIX A: Online Teacher Survey

SECTION ONE (Background)

1. In what context did you use KiwiCo learning crates, primarily?
   - Summer Program
   - Enrichment Program (in-school)
   - After School Program
   - Other _____

2. How many years of teaching experience do you have?
   - 1-3 years
   - 4-6 years
   - 7-10 years
   - 11-15 years
   - 16+ years

3. How many years of teaching experience do you have at your current school?
   - 1-3 years
   - 4-6 years
   - 7-10 years
   - 11-15 years
   - 16+ years

4. Which grade level do you teach, primarily?
   - 1
   - 2
   - 3
   - 4
   - 5

5. Please provide your gender identity.
   - Male
   - Female
   - Non-binary
   - Prefer not to answer

6. Which of the following best describes your race?
   - Black or African American
   - American Indian or Alaska Native
   - White
   - Asian
   - Native Hawaiian or Other Pacific Islander
   - Multiracial
   - Other (Please specify)
   - I prefer not to answer

7. What is your highest earned degree at the beginning of the 2023-2024 school year?

- AA / AS / AAS
- BA / BS
- MA / MS
- PhD / EdD

SECTION TWO (Implementation)

8. How often during the semester (or during the summer session) do you implement KiwiCo crates or elements from the crates?
   - Daily
   - Several times per week
   - Once per week
   - Rarely
   - Never

9. (*Open-ended*) How prepared did you feel to implement KiwiCo learning crates in your classroom? How could you have felt more prepared?

10. What barriers did you experience while implementing learning crates?

SECTION THREE (Perceived Impact)

11. Use the following scale to indicate the degree to which you agree or disagree with each statement. (Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree).

- KiwiCo learning crates improve students' overall attitudes towards STEAM.
- KiwiCo learning crates are effective for increasing student achievement.
- KiwiCo learning crates improve student engagement.
- KiwiCo learning crates improve student motivation.
- KiwiCo learning crates improve student confidence.

21st Century Skills

12. To what degree did you observe the following 21st century skills, as a result of using learning crates in your classroom? (To a great extent, Somewhat, Neutral, Very little, Not at all).

- Leading others
- Encouraging others to do their best
- Produce high-quality work
- Respecting others
- Help / assist peers
- Include others in decision-making
- Make changes when things do not go as planned
- Set learning goals
- Manage time wisely
- Prioritize assignments / tasks
- Work well with others

SECTION FOUR (Overall Reactions)

13. Use the following scale to indicate the degree to which you agree or disagree with each statement regarding program attitudes: Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree

- I felt prepared to implement KiwiCo learning crates in my classroom(s).
- I would like to continue using KiwiCo learning crates in the future in my classroom(s).
- I would recommend KiwiCo learning crates to other teachers.

14. *Open-ended*: What do you like best about KiwiCo learning crates? Least?

15. *Open-ended*: Are there specific topics that you would like to see KiwiCo include?

16. *Open-ended*: Do you have any recommendations for how to improve the learning crates?

APPENDIX B: Virtual Focus Group Protocol

SECTION ONE (Background)

1. Please tell me your first name, the grades and subjects you teach, and how many years you have been a teacher.

2. In what context did you use KiwiCo learning crates?
   - Summer Program
   - Enrichment Program (in-school)
   - After School Program
   - Other _____

SECTION TWO (Implementation)

3. How often did you implement KiwiCo learning crates or elements from the crates?

4. What does a typical day of implementation look like in your classroom?

5. How prepared did you feel to implement KiwiCo learning crates in your classroom? How could you have felt more prepared?

6. What barriers did you experience while implementing learning crates? What successes did you experience?

SECTION THREE (Perceived Impact)

7. Do you feel as though the KiwiCo learning crates:

   - Improved overall attitudes towards STEAM?
   - are effective for increasing student achievement?
   - improve student engagement, motivation, and/or confidence?

21st Century Skills

8. To what degree did you observe the following 21st century skills, as a result of using learning crates in your classroom? Please support with examples.

   - Leading others
   - Encouraging others to do their best
   - Produce high-quality work
   - Respecting others
   - Help / assist peers
   - Include others in decision-making
   - Make changes when things do not go as planned
   - Set learning goals
   - Manage time wisely
   - Prioritize assignments / tasks

- Work well with others

SECTION FOUR (Overall Reactions)

9. What do you like best about KiwiCo learning crates? Least?
10. Are there specific topics that you would like to see KiwiCo include?
11. Do you have any recommendations for how to improve the learning crates?

APPENDIX C: Teacher Survey Responses

Implementation

	Never use %	Rarely use %	Once per Week %	Several times per week %	Daily %
How often during the semester (or during the summer session) do you implement KiwiCo crates or elements from the crates?	2.2%	10.1%	23.6%	22.5%	55.1%

Perceived Impacts

	Strongly disagree %	Somewhat disagree %	Neither agree nor disagree %	Somewhat agree %	Strongly agree %	Unable to rate %	N	M	SD
KiwiCo learning crates improve students' overall attitudes towards STEAM.	2.2%	0.0%	2.2%	18.0%	76.4%	1	89	5.70	0.74
KiwiCo learning crates are effective for increasing student achievement.	3.4%	0.0%	3.4%	36.0%	55.1%	2	89	5.46	0.87
KiwiCo learning crates improve student engagement.	2.2%	0.0%	0.0%	12.4%	85.4%	0	89	5.79	0.66
KiwiCo learning crates improve student motivation.	2.2%	0.0%	1.1%	20.2%	76.4%	0	89	5.69	0.71
KiwiCo learning crates improve student confidence.	3.4%	3.4%	4.5%	31.5%	56.2%	1	89	5.37	0.98

To what degree did you observe the following 21st century skills, as a result of using learning crates in your classroom?

	To a great extent %	Somewhat %	Neutral %	Very little %	Not at all %	Unable to Rate %	N	M	SD
Leading others	39.3%	39.3%	10.1%	1.1%	4.5%	5.6%	89	3.09	1.35
Encouraging others to do their best	64.0%	25.8%	4.5%	0.0%	2.2%	3.4%	89	2.61	1.13
Produce high-quality work	51.7%	40.4%	4.5%	1.1%	0.0%	2.2%	89	2.64	0.91
Respecting others	52.8%	31.5%	7.9%	1.1%	1.1%	5.6%	89	2.83	1.27
Help / assist peers	76.4%	16.9%	3.4%	0.0%	1.1%	2.2%	89	2.39	0.94
Include others in decision-making	38.2%	40.4%	11.2%	1.1%	3.4%	5.6%	89	3.08	1.32
Make changes when things do not go as planned	55.1%	32.6%	3.4%	3.4%	2.2%	3.4%	89	2.75	1.18
Set learning goals	48.3%	29.2%	13.5%	2.2%	2.2%	4.5%	89	2.94	1.28
Manage time wisely	43.8%	42.7%	6.7%	3.4%	1.1%	2.2%	89	2.82	1.03
Prioritize assignments / tasks	38.2%	41.6%	12.4%	2.2%	2.2%	3.4%	89	2.99	1.16
Work well with others	69.7%	23.6%	2.2%	1.1%	1.1%	2.2%	89	2.47	0.97

Overall Reactions

	Strongly disagree %	Somewhat disagree %	Neither agree nor disagree %	Somewhat agree %	Strongly agree %	N	M	SD
I felt prepared to implement KiwiCo learning crates in my classroom(s).	2.3%	0.0%	2.3%	48.9%	46.6%	88	5.38	0.74
I would like to continue using KiwiCo learning crates in the future in my classroom(s).	2.3%	1.1%	2.3%	20.5%	73.9%	88	5.63	0.79
I would recommend KiwiCo learning	2.3%	0.0%	1.1%	21.6%	75.0%	88	5.67	0.72

crates to other teachers.