IMPEDIMENTS IN THE IMPLEMENTATION OF I-READY MATH PROGRAM INSTRUCTION IN MIDDLE SCHOOL

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ABSTRACT

The study delves into the impediments encountered in implementing the i-Ready Math Program at Aniak Jr/Sr High School in Alaska, USA. Motivated by the challenges hindering effective program implementation within the school setting, the research focuses on the relationship between academic performance and factors influencing implementation, particularly resource availability and alignment with curriculum standards.

The study's participants included students and teachers at Aniak Jr/Sr High School. The research employed a descriptive-correlational approach, utilizing a survey instrument to gather data. Descriptive statistics, specifically the weighted mean, were used to analyze the data, with inferential statistics conducting variance analysis set at a significance level of 0.05.

Findings from the study revealed that alignment with curriculum standards and students' academic performance, as measured by their grade point averages (GPA), were areas requiring improvement. It was discovered that factors such as teacher training, resource availability, and alignment with curriculum standards significantly impact the i-Ready program implementation. The study suggested crafting intervention programs focusing on these aspects to enhance implementation effectiveness.

Moreover, the research highlighted discrepancies in the implementation of key aspects of the i-Ready program, such as student engagement and data analysis. The study recommends fostering open dialogue between teachers and students to address these discrepancies and improve program effectiveness. The results underscore the importance of continuous training and workshops to support teachers and students in effectively utilizing the i-Ready program, thereby enhancing academic performance and overall program outcomes.

Keyword : *i-Ready Implementation, Effective Program Instruction, Academic Performances in Mathematics, and I-ready Program Instruction.*

INTRODUCTION

Effective intervention in mathematics education is crucial for addressing the needs of students struggling with foundational concepts, ensuring their success in later academic pursuits. As students' progress through their formative years, the significance of timely interventions becomes increasingly apparent, as unaddressed gaps can impede their ability to grasp more advanced mathematical concepts. To address this challenge, educational institutions have turned to innovative solutions such as the i-Ready online personalized instruction program for mathematics.

Research indicates that tailored instruction based on diagnostic assessments offered by i-Ready can effectively cater to individual student needs while fostering skill development and conceptual understanding. Swain,

Randel, and Norman Dvorak (2020) emphasize the pivotal role of effective intervention in mathematics education. I-Ready, developed by Curriculum Associates, aligns with college- and career-readiness standards and employs engaging multimedia lessons and progress-monitoring tools to track student performance (Curriculum Associates, 2019). Moreover, Bryant, Gersten, Scannacca, and Chavez (2020) highlight its potential for significantly enhancing student outcomes through personalized instruction.

Despite its promise, the effective implementation of i-Ready faces significant challenges, especially in schools with notable mathematics achievement gaps. In Alaska, mathematics proficiency has been a growing concern, with schools like Aniak Jr/Sr High School grappling with suboptimal student performance in mathematics, as evidenced by recent assessments (Bailey, 2021). The discrepancy between proficiency levels and actual performance underscores the urgency of this investigation. Addressing these implementation challenges is crucial to support struggling learners and improve overall mathematics achievement at the local level.

The study aimed to delve into the specific obstacles hindering the successful implementation of the i-Ready Math program at Aniak Jr/Sr High School. By identifying these impediments, the research sought to provide valuable insights into optimizing the use of i-Ready Math, enhancing teacher proficiency in its applicati empowering students to navigate personalized instruction paths effectively. The ultimate objective is to d School-Based Enhancement Training-Workshop on Printed i-Ready Learning Activities for Teachers Through Designing Digitized Learning Materials, thereby benefiting educators, students, and the broader educational community by improving the effectiveness of personalized math instruction.

METHODOLOGY

The study used a descriptive-correlational design that analyzed and explained the relationship between the academic performance of the respondents having the i-Ready instruction and the level of implementation without making any claims about the cause and effect. The study aimed to provide static pictures of situations and establish the relationship between the student's academic performance and the impediments affecting the implementation of the i-Ready Program. The design is appropriate for the research because in conducting the study, the researcher was required to collect data based on the academic performance of the participants.

RESULTS AND DISCUSSION

The analysis and interpretation of the findings follow the logical sequence of the problems from the respondents through a survey questionnaire. Thus, the data are analyzed, interpreted, and presented in a manner that is understandable to the readers.

Table 2 presents the academic performance of the students in implementing the iready program and is associated with the evaluation test results, which correspond to a student's achievement.

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Table 2. Students' Academic Performance

	Grade Point Average (GPA)					
Grade Level	A	B	C	D	F	Total
7th Grade	3	0	3	3	0	9
8th Grade	1	4	3	0	0	8
9th Grade	1	3	3	1	0	8
Total	5	7	9	4	0	25

Legend: A- (90-100), B-(80-89), C-(70-79), D-(60-69), F-(59 and below)

Table 2 shows students' general point average (GPA) according to the data gathered. The data indicates a wide range of academic performance among 7th graders. Three students achieved the highest grade bracket (90-100), while an equal number of students received grades in the C (70-79) and D (60-69) ranges. This suggests that the i-

Ready program has mixed effectiveness at this grade level, benefitting some students significantly while not effectively reaching others.

The majority of 8th graders are clustered in the B (80-89) range, with four students falling into this category. One student achieved an A (90-100), and three received a C (70-79). This distribution indicates that the i-Ready program is helping most students to achieve moderate success but may not be sufficiently challenging or supportive to elevate more students to the highest performance levels.

Similar to the 8th grade, most 9th graders achieve in the B and C ranges. There is only one student in the highest bracket (A, 90-100) and one in the lowest (D, 60-69). This suggests that the i-Ready program provides consistent support to maintain middle-level performance but does not significantly elevate or diminish students' performance.

These findings align with several studies on the i-Ready math program. Lewis (2018) found that while i-Ready Math could predict standardized test performance, its overall effectiveness varied based on implementation fidelity and consistency. Similarly, Brown-Cannon (2019) noted that inconsistent use of the i-Ready math program limited its effectiveness, highlighting the need for better implementation practices and professional development for teachers to maximize the program's benefits.

Table 3 presents the impediments influencing the implementation of the i-Ready program in terms of teachers' training and support, resource availability, and alignment with curriculum standards.

Table 3. Impediments Influencing i-Ready Program Implementation

Indicators	Weighted Mean	Verbal Description
Teachers Training and Support		
My teacher effectively explained how to use iReady Math.	3.56	Agree
I received enough practice or instruction to feel confident using iReady Math.	3.40	Agree
My teacher is helpful when I have questions about iReady Math.	3.46	Agree
My teacher encourages me to use iReady Math effectively.	3.16	Neutral
My teacher knows a lot about iReady Math.	3.81	Agree
Mean	3.47	Agree
Resource Availability		
I can use a computer or tablet for iReady Math in class whenever I need to.	3.92	Agree
The internet connection is usually good when I use iReady Math.	4.04	Agree
There are enough computers or tablets for everyone to use iReady Math at the same time.	3.92	Agree
It's easy for me to get a computer or tablet to use iReady Math outside of class.	4.08	Agree
I have encountered no issues while using iReady Math on computers or tablets.	3.64	Agree
Mean	3.92	Agree
Alignment with Curriculum Standards		
The topics I learn in iReady Math match well with what I learn in math class.	3.40	Agree
iReady Math helps me understand what I'm learning in math class better.	2.40	Disagree
The activities in iReady Math are just right for what I'm learning in math class.	1.44	Strongly Disagree
I learn things in iReady Math that I should be learning in math class.	2.20	Disagree
iReady Math prepares me well for tests or quizzes in math class.	2.80	Neutral
Mean	2.44	Disagree
Overall-Mean	3.27	Agree

Legend: 4.20-5.00 – Strongly Agree; 3.40-4.19 – Agree; 2.60-3.49 – Neutral; 1.80-2.59 – Disagree; 1.00-1.79 – Strongly Disagree

As depicted in table 3, the impediments affecting the implementation of i-Ready program instructions show that in the category of teachers' training and support, the indicator "my teacher knows a lot about i-Ready Math" received the highest mean of 3.81 (Agree), suggesting that teachers possess significant knowledge about the program. Conversely, the indicator "my teacher encourages me to use i-Ready Math effectively" had the lowest mean of 3.16 (Neutral). The average weighted mean for this category was 3.47 (Agree), indicating that while teachers are knowledgeable, students need more encouragement and support to ensure effective use of the program. This implies that the implementation of teachers' training and support is adequate, but additional provisions for

programs related to implementing i-Ready should be considered. A detailed intervention plan should be proposed annually to address this need.

Regarding resource availability, all indicators received a verbal description of "Agree," with means of 3.92, 4.04, 3.92, 4.08, and 3.64, respectively. The average mean was 3.92 (Agree), reflecting respondents' satisfaction with the sufficiency and accessibility of computer devices and internet connectivity necessary for the i-Ready program. This suggests that resource availability is not a significant impediment to the program's implementation and that proper resources are in place to support the program.

The alignment of the i-Ready program with curriculum standards received mixed responses, with an overall average weighted mean of 2.44 (Disagree). The highest-rated indicator, "The topics I learn in i-Ready Math match well with what I learn in math class," had a mean of 3.40 (Agree), while "The activities in i-Ready Math are just right for what I am learning in math class" received the lowest mean of 1.44 (Strongly Disagree). Other indicators had means of 2.40, 2.20, and 2.80, with verbal descriptions of Disagree or Neutral. These results imply a perceived misalignment between i-Ready activities and classroom instruction, indicating that the program does not consistently match the curriculum.

The findings align with the literature on the importance of teacher training and support in educational program implementation. According to Abbas (2019), in the Theory of Constructivism, practical teacher training can significantly impact how well new knowledge is integrated into existing instructional practices. This underscores the need for ongoing professional development to ensure teachers are equipped to encourage effective use of programs like i-Ready. As highlighted by Blackwell (2020), resource availability is critical in supporting student learning and improving achievement. Technology-based resources, such as computer software and online instructional programs, serve as valuable supplemental tools to transform traditional teaching methods and support student learning. This is consistent with the respondents' positive feedback on resource availability, indicating that sufficient technological resources are in place to facilitate the i-Ready program.

The alignment with curriculum standards remains a challenge, as reflected in the mixed responses. According to VanDerHeyden (2023), effective math instruction must build on previous knowledge for successful learning. Misalignment between instructional programs and classroom curricula can hinder students' learning progress. The study findings suggest that the i-Ready program may not adequately target students' academic needs, highlighting the importance of ensuring such programs are closely aligned with curriculum standards to maximize their effectiveness.

The results indicate that while teachers' training and support and resource availability are generally satisfactory, there is a need for better alignment between the i-Ready program and curriculum standards. The overall weighted mean of 3.27 (Agree) suggests that the program is being appropriately implemented to some extent, but additional professional development and alignment efforts are necessary. The proposed intervention, including workshops and the provision of printed materials, aims to address these impediments and enhance the effectiveness of the i-Ready program in improving students' mathematical skills. This comprehensive approach provides a clear framework for understanding and addressing the barriers to successful implementation, ultimately supporting better educational outcomes.

Factors Affecting the Academic Performance of Students

The results presented in Table 4 illustrate the factors affecting students' academic performance in the i-Ready program context. Regarding student engagement, all identified indicators received a verbal description of "Disagree" with an average weighted mean of 2.25. This suggests that students do not believe the i-Ready program accurately reflects their math learning gains, indicating a lack of a shared understanding of student achievement gains. The inconsistency in defining and measuring student outcomes highlights a fundamental issue in the program's implementation. Without a common framework, it becomes challenging to gauge and improve student performance through the program effectively.

Table 4. Factors Affecting Academic Performance of Students

Indicators	Weighted Mean	Verbal Description
Student Engagement		
I enjoy using iReady Math in class.	2.12	Disagree
I try my best when working on iReady Math activities.	2.56	Disagree
The activities in iReady Math are interesting.	2.36	Disagree
I look forward to using iReady Math in class.	2.04	Disagree
Using iReady Math helps me learn math better than other activities.	2.20	Disagree

Mean	2.25	Disagree
Data Analysis and Monitoring		
I receive feedback on my performance in iReady Math from my teacher.	3.44	Agree
The feedback I get from my teacher on my iReady Math work is helpful.	2.56	Disagree
I understand the feedback I receive from my teacher on my iReady Math work.	2.8	Neutral
I use my iReady Math progress to set goals for myself.	2.36	Disagree
My iReady Math progress accurately reflects my math skills.	2.96	Neutral
Mean	2.85	Neutral
Overall -Mean	2.55	Disagree

Legend: 4.20-5.00 – Strongly Agree; 3.40-4.19 – Agree; 2.60-3.49 – Neutral; 1.80-2.59 – Disagree; 1.00-1.79 – Strongly Disagree

Student survey responses further emphasize the challenges in engagement with i-Ready Math. Many students found the program *"too time-consuming" or "too easy and kinda boring."* Specific responses, were: "*I didn't enjoy i-Ready because it is online. I like doing work on paper," and "the pacing is too slow."* Another response was*, "it's merely repetitive math exercises."*

These sentiments underline the need for more engaging and appropriately challenging content to maintain student interest and participation.

In data analysis and monitoring, the indicator "I receive feedback on my performance in i-Ready Math from my teacher" achieved the highest mean of 3.44 with a verbal description of "Agree," indicating that feedback is being provided. However, the helpfulness of this feedback and its use in setting personal academic goals received lower means of 2.56 and 2.36, respectively, both described as "Disagree." This disparity suggests that while feedback is given, it may not be effectively utilized to enhance student learning or goal-setting. Teachers might not be engaging in meaningful discussions with students regarding the program's potential to improve problem-solving skills, which underscores the need for better communication strategies and more targeted professional development.

When students were asked if they received feedback on their performance, one student responded that, *"my teacher often gives us feedback after we complete our i-Ready Math."* Another response was, "*I regularly get updates on how I'm doing in i-Ready Math*." When students were also asked if the feedbacks are helpful to them, they responded that, *"The feedback is too general, and I don't know exactly what I need to do to improve."* Additionally, *"Sometimes the feedback helps, but other times it's not very useful."* On understanding the feedback, a student noted.

These views underline the need for improvement in terms of the feedback mechanism in using the i-Ready math program.

Also gleaned from table 4, the overall weighted mean of 2.55, with a verbal description of "Disagree," points to the necessity for improved implementation strategies for the i-Ready program. To address these challenges, schools should promote open dialogue between teachers and students throughout the academic year. Discussing the strengths and weaknesses of the program can provide valuable insights, enabling administrators to make timely adjustments based on teacher and student feedback. Such proactive measures can help ensure that the program is better tailored to meet the educational needs of all stakeholders.

This result is supported by the findings of Braynt and Chavez (2020), who highlighted the increasing focus on early mathematics difficulties. They noted that many elementary students struggle to achieve grade-level mathematics skills or make appropriate progress, emphasizing the need for effective interventions. Early and effective intervention is crucial to prevent future academic challenges in more advanced math concepts. Without timely support, the achievement gaps in mathematics can widen as students progress through their academic journey. Therefore, the successful implementation of programs like i-Ready, supported by adequate teacher training, resource availability, and alignment with curriculum standards, is essential to enhance student engagement and improve overall academic performance.

Evaluating i-Ready Math instruction in this context hoped to determine the extent to which the program achieved the intended goal of increasing student achievement.

As illustrated in table 5, there is no relationship between teachers' training and support and academic performance. It shows that the implementation of i-ready program instruction got a high probability of performing its function based on the response of each description/indicator with the computed p-value of 0.083. In contrast, a

computed p-value of 0.026 and 0.017 on resources availability and alignment with curriculum standards has a relationship with the academic performance of the students.

The result further shows the real and apparent significance of resource availability and alignment with the curriculum standards on the indicator. It further means that the school has a higher perspective on the learners' implementation and academic performance. Therefore, it implies that the school meets all the needs of the two indicators in terms of all various responsibilities.

This result conforms to the study of Candara (2020), which examined the proper implementation of different learning strategies in teaching mathematics. It established that parents prefer direct assistance in improving students' teaching and learning opportunities. Since some parents have difficulty understanding and answering math activities, some said that they do not have enough time to guide their kids due to work and other responsibilities. Also, some activities need clear instructions and explanations, so students have difficulty answering them. Hence, most teachers and parents still opt to use the i-Ready Program over other learning approaches. In addition, it is accessible and feasible for everyone, especially for students with different levels of understanding.

Table 5. Significant Relationship Between Academic Performance and the Impediments in i-Ready Implementation

Variable Tested		Computed r	p-value	Conclusion
Academic Performance	Teachers Training and Support	0.178	0.083	There is no sig relationship
	Resource Availability	0.456	0.026	Statistically Sig.
	Alignment with Curriculum Standards	0.567	0.017	Statistically Sig.

CONCLUSIONS

Regarding the students' academic performance, the respondents got a grade point average of A, B, C, and D, which were categorized as not good based on a grade point scale of 60-69. The results of the study justify that even though one of the goals of the i-Ready program is to increase equity, the implementation of the program should be based on the respondents' access to understanding the mathematics subject.

Among the factors affecting the implementation of i-Ready program instruction, alignment to curriculum standards was less regarded as an indicator than other indicators labeled as agreeable. This finding implies that the three indicators, namely teachers' training and support, resources availability, and alignment with curriculum standards, thus meet the proper implementation of the i-Ready program.

On the factors affecting the academic performance of students in Mathematics having the i-Ready program instruction, both indicators were not fully implemented as they were labeled "disagree." Results showed that student engagement and data analysis and monitoring of the i-Ready program would be better implemented if schools initiated open dialogue with teachers and students throughout the school year to discuss the strengths of the program and areas that need to be improved.

There is a significant relationship between students' academic performance and the factors affecting the implementation of i-Ready program instruction. Therefore, it implies that teachers and students meet all the needs in the school due to various responsibilities.

A workshop is needed to enhance the implementation of the i-Ready program.

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