IMSE Efficacy Study

Examining the Impact of IMSE's Instructional Approach Using the Morphology+ Program on Third-Grade Students' Reading Achievement

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ESSA MODERATE II

LXD RESEARCH®

MULTIPLE STUDIES

MODERATE

LXD Research Recognition for IMSE

im se institute for multi-sensory education

This program has been rigorously evaluated in multiple studies and is hereby acknowledged for meeting the educational impact criteria of the Every Student Succeeds Act (ESSA), warranting a **Level 2** for "**Moderate**" Evidence. This recognition is based on its proven effectiveness in enhancing grade-level learning outcomes with its OG+ and Morphology+ programs.

REVIEWED BY THE LXD RESEARCH EXPERT REVIEW PANEL

VERIFIED BY:

EVIDENCE for ESSA

December 2025

Rachel Schechter, Ph.D.
Founder of LXD Research

DATE

Understanding ESSA Evidence

Educators search for high-quality research and evidence-based solutions to strengthen grant applications, to support comprehensive and targeted instruction, or to implement new programming in their schools. Evidence requirements under the Every Student Succeeds Act (ESSA) are designed to ensure that states, districts, and schools can identify programs, practices, products, and policies that work across various populations.

Educational programs document their evidence of design, effectiveness, and impact in order to be eligible for federal funding. While there is no singular authority that determines a program's tier, the Department of Education's Office of Educational Technology provides standards to assess the varying levels of strength of research for education products.

The categories for ESSA Evidence are: strong (Tier 1), moderate (Tier 2), and promising (Tier 3) evidence of effectiveness, or demonstrates a rationale to be effective (Tier 4).

This product meets the requirements for Tier 2:

✔ In a quasi-experimental design, students who used the program are examined against a comparison group who did not use the program.

✔ This study is combined with another quasi-experimental study with the proper design and implementation with at least two teachers and a multi-site sample of 350 students (across studies) showed statistically significant, positive findings ("multiple studies")

✔ The study uses a program implementation that could be replicated.

★ A third-party research organization has reviewed the documentation for ESSA validation.

When product designers leverage learning sciences to design and evaluate the effectiveness of their programs, educators can better target instruction, and students' skills soar. Multiple quasi-experimental studies, utilizing standardized assessment data, analysis of student growth, and educator feedback, demonstrate the efficacy of this product, meeting the criteria for LXD Research's ESSA Tier 2 Evidence (Multiple Studies).

— Rachel Schechter, Ph.D., Founder of LXD Research

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ESSA MODERATE

LXD RESEARCH

PROGRAM DESCRIPTION

IMSE's instructional approach includes an upper elementary component of their K–5 program, Morphology Plus (Morphology+), intended for grades 3 and beyond. Morphology+ is a Structured Literacy curriculum and 30 hours of professional development designed to enhance vocabulary, fluency, and comprehension through explicit morphological instruction. The program builds knowledge of prefixes, suffixes, and Greek and Latin bases using systematic, multimodal routines using an explicit, structured format that extends IMSE's early literacy program (OG+) into the upper grades and includes targeted assessments to inform instruction and monitor progress.

STUDY DETAILS

Sample Description
- Total students: 206 in Grade 3 across four schools
- Treatment group: Students taught using IMSE's Morphology+: 51 students
- Comparison group: Students who received standard district literacy instruction: 155 students
- Location: Michigan

Time Frame
- Fall 2024–Spring 2025

Methodology
- Study Design: Quasi-experimental design with treatment and comparison groups.
- Instructional Model: Treatment teachers completed 30 hours of professional development before the start of the school year and implemented IMSE's Morphology+ lessons during instruction. The comparison group did not have the training or access to IMSE's Morphology+ lessons.
- Assessment Measure: NWEA MAP Growth at Fall 2024 (baseline) and Spring 2025 (outcome); Spring M-STEP assessment (outcome).
- Statistical Analysis: Linear regression of student growth, controlling for baseline scores, gender, ethnicity, and school fixed effects, with clustered standard errors at the teacher level.

STUDY SUMMARY

LXD Research conducted a quasi-experimental study to evaluate the impact of IMSE's instructional approach using IMSE's Morphology+ program on student literacy outcomes. Both the treatment and comparison groups received IMSE's OG+ instruction in second grade. The study followed 206 third-grade students across four schools in a Title I district in Michigan from Fall 2024 to Spring 2025. Student progress was measured using NWEA MAP Growth and M-STEP assessments, comparing students who were taught with IMSE's Morphology+ in third grade to a comparison students whose teachers used the district's standard literacy practices for third grade. Results showed that students taught with Morphology+ made significantly greater gains in literacy, demonstrating stronger performance on the NWEA MAP assessment---especially in vocabulary and informational text–and outperforming peers on the state M-STEP, particularly in listening and research skills.

KEY FINDINGS

- Students whose teachers used IMSE's Morphology+ showed **stronger performance on the NWEA MAP assessment**, with the most notable gains in vocabulary and informational text.
- Treatment students also **outperformed peers on M-STEP**, particularly in listening and research skills, suggesting the program supports both foundational literacy and higher-order skills.
- **Educators highlighted strong student engagement and growth,** crediting the program's structured approach and consistent routines.
- **Teachers reported high levels of confidence in IMSE's programming,** noting earlier and more fluent student mastery of literacy skills than previous years.
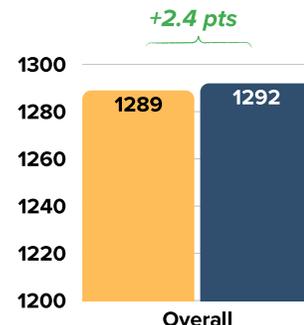
Students in Grade 3 who received instruction in IMSE's Morphology+ program showed significantly greater MAP and M-STEP scores at the end of the year.

Average Spring MAP Score
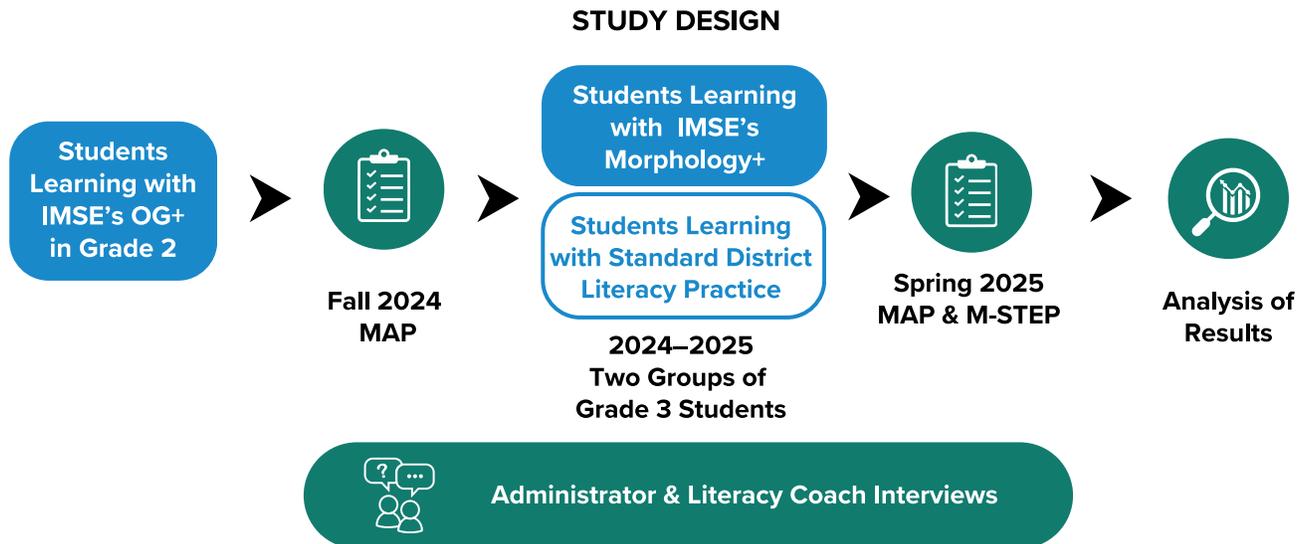
+0.9 pts
193 | 194
Overall

Average M-STEP Score

+2.4 pts
1289 | 1292
Overall

Non-IMSE | IMSE

MAP Overall: n = 206, β = 0.886, p < .05, Hedges' g = 0.05
M-STEP Overall: n = 205, β = 2.433, p < .01, Hedges' g = 0.15

RESEARCH DESIGN DESCRIPTION

This study employed a unique research design to examine the impact of IMSE's Structured Literacy approach beyond early literacy development. During the 2023–2024 school year, all second-grade teachers used IMSE's OG+ program to establish a strong foundation in phonics and early reading skills. As these students advanced to third grade in Fall 2024, they were assessed using the MAP Growth Reading assessment to establish a baseline. Only a portion of the third-grade teachers used IMSE's Morphology+ program. A research comparison emerged: third-grade students with access to IMSE's Morphology+ program and third-grade students whose teachers continued with standard district literacy instruction. Both groups were assessed again in Spring 2025 with MAP Growth and Michigan's M-STEP assessments. This design allowed researchers to evaluate how the sequential implementation of Structured Literacy programs—beginning with IMSE's OG+ in second grade followed by IMSE's Morphology+ in third grade—impacted student literacy development compared to students who received only the initial OG+ foundation without the follow-up Morphology+ instruction.

STUDY DESIGN

Students Learning with IMSE's OG+ in Grade 2 → **Fall 2024 MAP** → Students Learning with IMSE's Morphology+ / Students Learning with Standard District Literacy Practice — **2024–2025 Two Groups of Grade 3 Students** → **Spring 2025 MAP & M-STEP** → **Analysis of Results**

Administrator & Literacy Coach Interviews

EDUCATOR VOICES: INSIGHTS FROM ADMINISTRATORS AND TEACHERS

Educators and school leaders were interviewed or surveyed about their experience using IMSE's Morphology+. Conversations revealed strong student engagement and notable gains in vocabulary development—an area educators identified as a persistent challenge on standardized assessments. Educators credited the program's explicit, systematic focus on prefixes, suffixes, and base words for strengthening vocabulary, reading comprehension, and students' ability to apply morphological knowledge independently. They also highlighted IMSE's intentional learning continuum as a key differentiator from previous curricula. While time constraints and balancing Morphology+ with district-required materials were common challenges, educators consistently reported positive impacts on student learning.

> *"IMSE has a learning continuum, and there is reasoning behind the specific order of concepts and skills."*
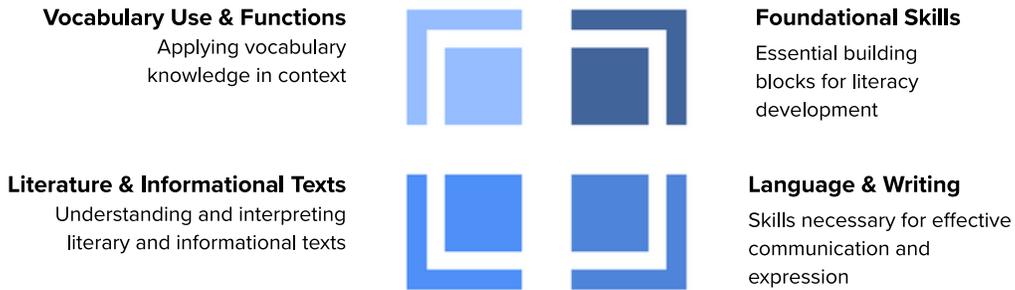>
> **—ELA Curriculum Coordinator**

> *"Across the board, probably almost every year that I've taught, the thing that the students have scored the lowest on is actually the vocabulary component of it. I think Morphology+ helped a lot in bringing up scores with that."*
>
> **—Instructional Coach**

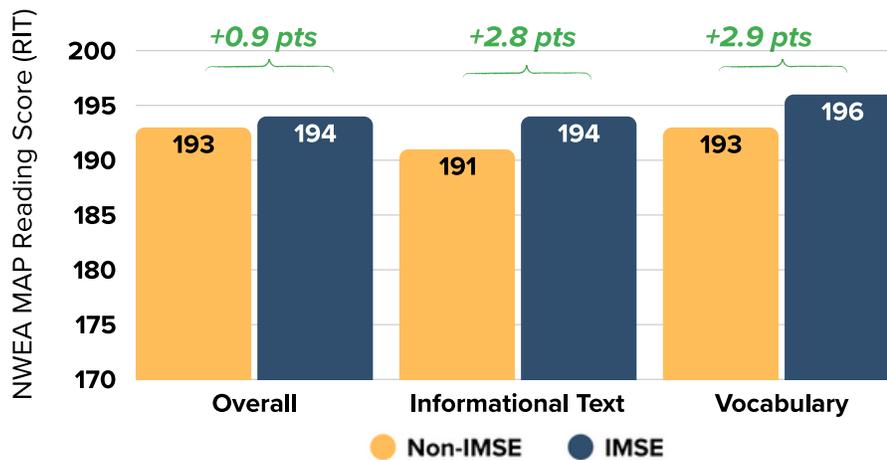## SUBDOMAIN IMPACT: TARGETED LITERACY SKILL DEVELOPMENT

The NWEA MAP assesses multiple subdomains, covering critical components of literacy. Gains on these subdomains were compared for students taught using IMSE's Morphology+ program and those in non-IMSE classrooms.

Structure of MAP Subdomains

Vocabulary Use & Functions
Applying vocabulary knowledge in context

Foundational Skills
Essential building blocks for literacy development

Literature & Informational Texts
Understanding and interpreting literary and informational texts

Language & Writing
Skills necessary for effective communication and expression

MAP assessments revealed nuanced improvements across critical literacy skill areas for third grade students receiving IMSE's Morphology+ instruction. Results showed statistically significant gains in multiple domains for students using IMSE's Morphology+, with the most substantial improvements in vocabulary (+2.9 points) and informational text comprehension (+2.8 points). These targeted gains align precisely with the program's explicit focus on morphological instruction, which equips students with strategies to analyze word parts, determine meaning, and tackle increasingly complex academic vocabulary. IMSE's Morphology+ program's impact was particularly evident in students' enhanced ability to comprehend informational texts, which typically contain more academic language and morphologically complex words than literary passages. While overall reading scores showed modest improvement (+0.9 points), the concentrated gains in vocabulary and informational text processing demonstrate how the program effectively addresses specific literacy skill gaps that are crucial for academic success in upper elementary grades and beyond. The vocabulary and informational text gains from IMSE's Morphology+ instruction represent approximately one month of additional academic growth compared to students who didn't receive the program.

Average Spring MAP Score by Group

NWEA MAP Reading Score (RIT)

Group	Overall	Informational Text	Vocabulary
Non-IMSE	193	191	193
IMSE	194	194	196

Gains: Overall +0.9 pts, Informational Text +2.8 pts, Vocabulary +2.9 pts

● Non-IMSE ● IMSE
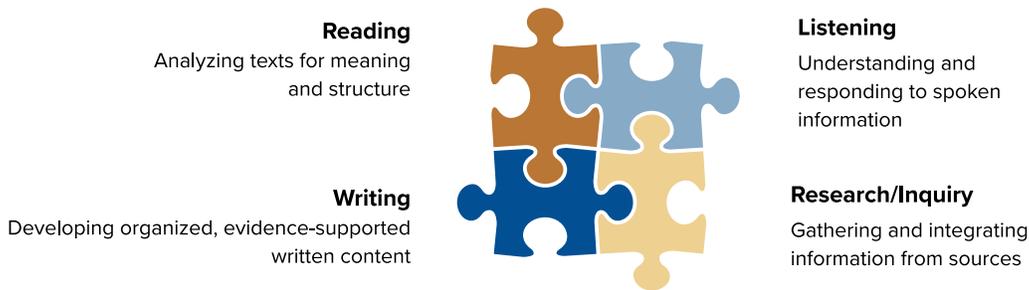
MAP Overall: n = 206, β = 0.886, p < .05, Hedges' g = 0.05
MAP Informational text: n = 206, β = 2.819, p <.01, Hedges' g = 0.17
MAP Vocabulary: n = 206, β = 2.928, p <.01, Hedges' g = 0.18

## M-STEP SUBDOMAIN IMPACT: TARGETED LITERACY SKILL DEVELOPMENT

The M-STEP assessment evaluates third-grade students on essential literacy skills aligned with Michigan's Academic Standards. The assessment measures students' reading abilities, including main idea identification and text analysis, along with listening comprehension, writing development, and research capabilities. These assessed skills align closely with the focus areas of IMSE's Morphology+ program, particularly vocabulary development and the ability to analyze word structures to determine meaning in increasingly complex texts.

Structure of M-STEP Subdomains

Reading
Analyzing texts for meaning and structure

Listening
Understanding and responding to spoken information

Writing
Developing organized, evidence-supported written content

Research/Inquiry
Gathering and integrating information from sources

The analysis of subdomains revealed significant improvements in third-grade students' M-STEP performance after receiving instruction with IMSE's Morphology+ program. While students showed gains overall, the most substantial improvements occurred in the Listening domain, where treatment students outperformed their peers by 10.3 points ($p < .01$, Hedges' $g = .62$). This notable effect indicates students' enhanced ability to understand and respond to spoken information—a critical skill supported by the program's emphasis on recognizing morphological patterns in academic language. This gain could be interpreted as an an additional 3 months of growth. Additionally, descriptive growth appeared in the Research/Inquiry domain, with treatment students scoring 4.5 points higher ($p = .060$, Hedges' $g = .27$), demonstrating improved capability in gathering and integrating information from multiple sources, but this effect did not reach significance. These improvements in higher-order literacy skills, combined with an overall performance increase of 2.4 points ($p < .01$, Hedges' $g = .15$), suggest that IMSE's Morphology+ program effectively supports both foundational literacy development and the more sophisticated comprehension abilities required for academic success.

Average Spring M-STEP Score by Group
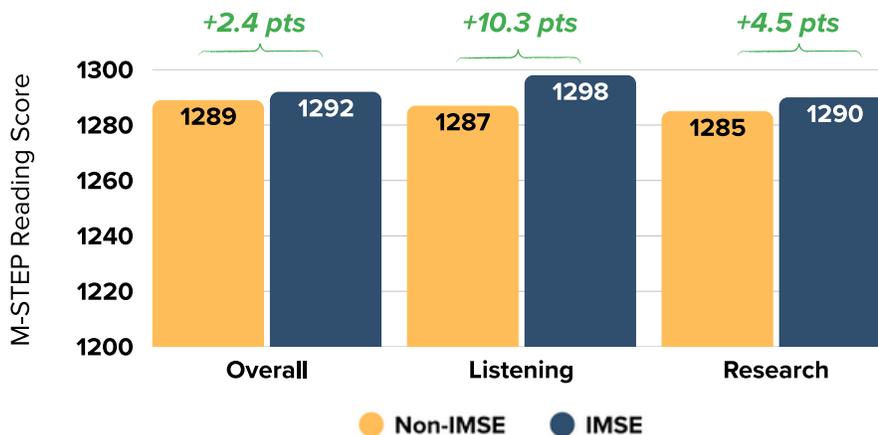
M-STEP Overall: n = 205, $\beta = 2.433$, $p < .01$, Hedges' $g = 0.15$
M-STEP Listening: n = 161, $\beta = 10.257$, $p < .01$, Hedges' $g = 0.62$
M-STEP Research: n = 203, $\beta = 4.519$, $p = .060$, Hedges' $g = 0.27$

CONCLUSION

Third-grade students whose teachers implemented IMSE's Morphology+ program demonstrated noteworthy academic progress beyond what was observed in the comparison group. This rigorous mixed-methods quasi-experimental investigation reveals the **substantial effectiveness of IMSE's Morphology+ program** in helping students achieve third-grade literacy growth benchmarks, sustain or enhance their performance standings, and show measurable improvement across key literacy subdomains. The research strongly indicates that the program's structured and explicit instructional methodology provides powerful support for student learning, particularly through its focused attention on morphemic awareness, vocabulary enrichment, word analysis skills, and reading comprehension strategies delivered through evidence-based multimodal techniques.

The quantitative findings were **strongly reinforced by qualitative feedback** gathered from education professionals during the study. School leaders and literacy specialists consistently observed tangible improvements in student performance throughout the implementation period. Teachers consistently expressed enthusiasm about IMSE's Morphology+ program, highlighting notable growth in students' vocabulary development and marked gains on assessments measuring prefixes, suffixes, and Greek and Latin roots. Educators also reported that students increasingly recognized and applied morphemes in their broader coursework, demonstrating meaningful transfer of learning and reinforcing the program's impact on developing foundational word-analysis skills.

✅ **Students taught using IMSE's Morphology+ program demonstrated significant progress in meeting literacy growth targets.**

✅ **Students taught using IMSE's Morphology+ program showed substantial gains in improving their performance on state tests.**

✅ **Students taught using IMSE's Morphology+ program showed greater gains on multiple literacy subdomains.**

LXD Research is an independent research firm that evaluates educational programs with ESSA-aligned methods.

Learn more at www.lxdresearch.com

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