IES Institute of Education Sciences

eMINTS Comprehensive Program

Intervention Brief | Teacher Excellence Topic Area

WHAT WORKS CLEARINGHOUSE™
April 2020

NCEE WWC 2020-011
U.S. DEPARTMENT OF EDUCATION

A Publication of the National Center for Education Evaluation at IES

Research has shown that teacher effectiveness is the most important school-based factor that influences student outcomes, including student achievement. Studies have also shown that there is substantial variation in teacher effectiveness to improve student outcomes.[1] The strong influence of teachers on student outcomes, as well as the variation in teacher effectiveness, has led to the creation of programs designed to help teachers improve their effectiveness in the classroom. The *eMINTS Comprehensive Program* aims to help teachers improve their practice and the outcomes of their students by offering structured professional development, coaching, and support for integrating technology into the classroom. The program's goals include supporting teachers in using classroom technology to implement high-quality, inquiry-based learning, in which students develop understanding and knowledge of content matter by engaging in meaningful investigations that require reasoning, judgement, and decision making. The intervention can provide support to teachers in any subject area, including math, literacy, and science.

This What Works Clearinghouse (WWC) report, part of the WWC's Teacher Excellence topic area, explores the effects of the *eMINTS Comprehensive Program*, referred to as *eMINTS* in this report, on student achievement. The WWC identified eight studies of *eMINTS*. Two of these studies meet WWC standards. The evidence presented in this report is from two studies of the impact of *eMINTS* on students in grades 4, 5, 7, and 8.

What Happens to Students When Their Teachers Participate in *eMINTS*?

The evidence indicates that implementing *eMINTS*:

- **May increase general mathematics achievement**
- **May result in little or no change in general literacy achievement**

Findings on *eMINTS* from two studies that meet WWC standards are shown in Table 1. The table reports an effectiveness rating, the improvement index, and the number of studies and students that contribute to the findings. The improvement index is a measure of the intervention's effect on an outcome. It can be interpreted as the expected change in percentile rank for an average comparison group student if that student had been placed in the classroom of an *eMINTS* teacher.

Table 1. Summary of findings on *eMINTS* from studies that meet WWC standards

		Study Findings	Evidence meeting WWC standards (version 4.0)	
Outcome domain	Effectiveness rating	Improvement index (percentile points)	Number of studies	Number of students
General mathematics achievement	Potentially positive effects	+2	2	3,096
General literacy achievement	No discernible effects	0	2	3,245

Note: The improvement index can be interpreted as the expected change in percentile rank for an average comparison group student if that student had received the intervention. For example, an improvement index of +2 means that the expected percentile rank of the average comparison group student would increase by 2 points if the student were placed in an *eMINTS* classroom. The improvement index values are generated by averaging findings from the outcome analyses that meet WWC standards, as reported by Brandt et al. (2013) and Martin et al. (2009). A positive improvement index does not necessarily mean the estimated effect is statistically significant. General mathematics and literacy achievement outcomes reported in these studies are scores from the Missouri Assessment Program standardized tests in each subject. The effects of *eMINTS* are not known for other outcomes within the Teacher Excellence topic area protocol, including general science achievement, general social studies achievement, general achievement, English language proficiency, staying in school, progression in school, completing school, student social interaction, observed individual behavior, student emotional status, student engagement in school, instructional practice, teacher attendance, teacher retention at the school, teacher retention in the school district, teacher retention in the state, or teacher retention in the profession.

BOX 1. HOW THE WWC REVIEWS AND DESCRIBES EVIDENCE

The WWC evaluates evidence based on the quality and results of reviewed studies. The criteria the WWC uses for evaluating evidence are defined in the Procedures and Standards Handbooks and the Review Protocols. The studies summarized in this report were reviewed under WWC Standards (version 4.0) and the Teacher Excellence topic area protocol (version 4.0).

To determine the effectiveness rating, the WWC considers what methods each study used, the direction of the effects, and the number of studies that tested the intervention. The higher the effectiveness rating, the more certain the WWC is about the reported results and about what will happen if the same intervention is implemented again. The following key explains the relationship between effectiveness ratings and the statements used in this report:

Effectiveness Rating	Rating interpretation	Description of the evidence
Positive (or negative) effects	The intervention ***likely*** to change an outcome	Strong evidence of a positive effect, with no overriding contrary evidence
Potentially positive (or negative) effects	The intervention ***may*** change an outcome	Evidence of a positive effect with no overriding contrary evidence
No discernible effects	The intervention ***may result in little to no change*** in an outcome	No affirmative evidence of effects
Mixed effects	The intervention ***has inconsistent effects*** on an outcome	Evidence includes studies in at least two of these categories: studies with positive effects, studies with negative effects, or more studies with indeterminate effects than with positive or negative effects

How is *eMINTS* Implemented?

The following section provides details of how *eMINTS* was implemented. This information can help educators identify the requirements for implementing *eMINTS* and determine whether implementing this intervention would be feasible in their district or school. Information on *eMINTS* presented in this section comes from the studies that meet WWC standards (Brandt et al., 2013; Martin et al., 2009) and from correspondence with the developer.

- **Goal:** *eMINTS* aims to help teachers improve student outcomes by integrating technology into their curriculum, implementing high-quality lesson plans, and building a learning community within their school.
- **Target population:** *eMINTS* is offered to teachers of students in kindergarten through grade 12.
- **Method of delivery:** Teachers receive training in *eMINTS* through professional development offered online or in person and through coaching visits in their classrooms. Additional teaching resources are available through an online *eMINTS* portal.

Comparison group: In the two studies that contribute to this intervention report, students in the comparison group were taught by teachers who did not receive *eMINTS* training. Teachers may have received other training and professional development offered by their schools or school districts.

- **Frequency and duration of service:** Over the course of 2 or more years, teachers participate in approximately 140 hours of professional development through a series of sequenced learning sessions. Instructional specialists provide as many as 10 coaching sessions for teachers in their classrooms, with each session lasting up to 2 hours. Refer to Table 2 for additional details.
- **Intervention components:** The key components of *eMINTS* are described in Table 2. A shorter version of the *eMINTS* program called *eMINTS4All* includes fewer professional development sessions and coaching visits. The main findings in this report measured the effectiveness of the *eMINTS Comprehensive Program*.

Table 2. Components of *eMINTS*

Key component	Description
Sequenced professional development	Over the course of 2 or more years, teachers participate in approximately 140 hours of professional development focused on integrating technology into the classroom and developing lessons that use inquiry-based learning, in which students engage in open-ended and meaningful investigations. Session topics also support building a community of learning in schools, student assessment, and classroom management. Sessions are offered in person or online and are held over 3 to 6 hours. The studies of *eMINTS* summarized in this review each provided more than 200 hours of professional development, rather than the recommended 140 hours.
Coaching	Instructional specialists provide up to 10 coaching sessions in teachers' classrooms over 2 or more years. Each session is offered one on one and lasts from 1 to 2 hours. Specialists also offer coaching to groups of teachers to support collaboration and building a learning community within a school. In one of the studies of *eMINTS* summarized in this review (Martin et al., 2009), teachers received at least 20 coaching sessions over 2 years.
Technology integration	Instructional specialists help *eMINTS* classrooms integrate technology as a tool to support inquiry-based instruction, differentiated learning, and student assessment. Technology integration can take various forms. Examples of integration include computerized student assessments, or a teacher leading instruction from a computer blackboard while students participate at individual workstations.
Online resources	Teachers can access a range of materials through *eMINTS*' online portal, including formative and summative assessments, teacher lesson plans and guides, and examples of high-quality classroom websites. The *eMINTS* program also provides online courses for teachers to supplement the professional development and coaching. At the end of the first year, teachers develop a classroom website with the help of the instructional specialist as a resource for students and their families (for example, to provide class schedules, homework assignments, and sample assessments).

What Does *eMINTS* Cost?

This preliminary list of costs is not designed to be exhaustive; rather, it provides educators an overview of the major resources needed to implement *eMINTS*. The program costs described below are based on the information available as of July 2019.

- **Equipment and materials costs:** To support technology integration, each student must have individual access to an Internet-connected computer or tablet. For schools that lack this access in the classroom or in a computer lab, the cost of providing computers is approximately $500 per student. The program can be adapted to the existing technology in the school.
- **Personnel costs:** For a fee of $10,000 per teacher for each year of the two-year program, *eMINTS* will provide instructional specialists to lead professional development and coaching activities. The developer may offer a discount on this fee when providing a custom quote to a district that meets certain criteria. Each participating classroom teacher is offered approximately 140 hours of professional development in sessions that are up to 6 hours long. In addition, teachers participate in as many as 10 coaching sessions that are 1 or 2 hours long. Schools may choose to schedule professional development and coaching sessions within or outside of the school day.
- **Facilities costs:** Professional development and coaching activities are offered online or in person at the school. For activities that occur in person, the school or district will need to supply space to host the teacher training.
- **Costs paid by students or parents:** There is no charge to students or parents.
- **In-kind supports:** To help offset the costs of *eMINTS*, schools that meet certain criteria may be eligible to receive discounts on educational products from *eMINTS* partners.
- **Sources of funding:** The developer has provided *eMINTS* through various U.S. Department of Education grant programs, including the Student Support and Academic Enrichment program, the Investing in Innovation Fund, the Supporting Effective Educator Development grant program, and the Education Innovation and Research program. In Missouri, where the program was developed, grant funds from the Missouri Department of Elementary and Secondary Education have supported the program.

For More Information:

About *eMINTS*

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About the cost of *eMINTS*

Information about *eMINTS*' costs was provided by the developer.

In What Context Was *eMINTS* Studied?

The following section provides information on the setting of the two studies of *eMINTS* that meet WWC standards, and a description of the participants in the research. This information can help educators understand the context in which the studies of *eMINTS* were conducted and determine whether the program might be suitable for their setting.

WHERE THE STUDIES WERE CONDUCTED

2 studies, 3,245 students in as many as 74 public schools in Missouri.

At least 39 of the schools were in rural areas

Race

Gender

Free & Reduced-Price Lunch: 47%

Grades

Grades 4, 5, 7, 8

LEARN MORE

Read more about the *eMINTS* intervention and the studies that are summarized here in the Intervention Report.

Endnote

[1] Hanushek (2011) and Chetty et al. (2014), for example, describe differences across teachers in their impacts on academic achievement and earnings.