APPENDIX

Elementary Mathematics Specialists in Illinois
A Landscape Study of Statewide Interest and Need

By Gudelia López, PhD, and Martin Gartzman
July 2020
Table of Contents

APPENDIX A: EMS District Survey .............................................. 1
APPENDIX B: EMS School Survey .............................................. 8
APPENDIX C: EMS Pilot Program Teacher Survey ....................... 13
APPENDIX D: Interview Protocols ............................................ 16
APPENDIX E: Illinois University Leader Interview Protocols ........... 18
APPENDIX F: Additional EMS School Figures ............................. 20
APPENDIX G: Comments on the EMS District Survey .................. 26
EMS Landscape Project FINAL Survey for Illinois Districts

[Note: An * indicates the question is required. Only those that were the most critical were required. Anything in brackets was built into the online version of the survey. Participants can see what percent of the survey they have completed after they complete each web page.]

1. * What is the name of this district? _______________________________

2. * In which town is this district located? _______________________________

3. * In which county is this district located? [Drop down list of all counties in Illinois.]

4. * What type of district is this district? [This question is a branching question. Subsequent questions depend on how they answer this question.]
   - Elementary [If selected, go to Q#5]
   - Unit [If selected, go to Q#5]
   - High School [If selected, the survey ends]

Please provide information for the person completing this survey.

5. * Which of the following best describes your position?
   - Mathematics director
   - STEM director
   - Director of Curriculum and Instruction
   - Assistant Superintendent of Curriculum and Instruction
   - Superintendent
   - Other (please specify):

6. How long have you worked in this district?
   - Less than 2 years
   - 2 to 5 years
   - 6 to 10 years
   - More than 10 years
Modified item from NSSME (2018 National Survey of Science and Mathematics Education)

7. To what extent would each of the following contribute to improving mathematics instruction in your district?

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little</th>
<th>Some</th>
<th>To a great extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing teachers’ math content knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increasing teachers’ pedagogical content knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increasing instructional time to teach mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increasing mathematics-related professional development opportunities (including in-school collaboration)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increasing the coaching support provided for teachers in mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having teachers with significant content knowledge teach mathematics in a ‘departmentalized/specialized’ organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. * Is one-on-one coaching in mathematics available to teachers in this district?

   ☐ Yes [If selected, go to Q#9]
   ☐ No [If selected, go to Q#11]
**Modified item from NSSME**

9. In your district/school, is one-on-one coaching provided by each of the following? [Select one on each row.]

<table>
<thead>
<tr>
<th>No</th>
<th>Yes, provides coaching only in mathematics</th>
<th>Yes, provides coaching in mathematics and other subject areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>The principal of the school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>An assistant principal at the school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>District administrators including mathematics supervisors/coordinators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers/coaches who do not have classroom teaching responsibilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers/coaches who have part-time classroom teaching responsibilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers/coaches who have full-time classroom teaching responsibilities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Modified item from NSSME**

10. What are the currently required qualifications in your district for individuals responsible for coaching teachers in mathematics? Check all that apply.

- [ ] Experienced math teacher
- [ ] Has extra formal coursework in teaching mathematics
- [ ] Has a degree or a minor in mathematics
- [ ] Has a middle grades math endorsement
- [ ] Has general knowledge of instructional improvement
- [ ] No special qualifications required
- [ ] Other: Please specify _____________________________
Modified item from the Survey of Enacted Curriculum (WCER)

11. Which of these categories best describes the way math classes in this district are organized at each grade?

<table>
<thead>
<tr>
<th>Grade</th>
<th>Specialized/departmentalized instruction (when a teacher teaches more than one class of students in math, formally or informally)</th>
<th>self-contained (when a teacher teaches all subjects)</th>
<th>Self-contained but we may be interested in specialization/departmentalization</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. What are the criteria used to select teachers to teach specialized/departmentalized mathematics in this district? Check all that apply.

- Does not apply
- Experienced math teacher
- Has extra formal coursework in teaching mathematics
- Has a degree or a minor in mathematics
- Has a middle grades math endorsement
- Has general knowledge of instructional improvement
- No special qualifications required
- Other: Please specify _____________________________

Please read before answering the next question.

The Elementary Mathematics Teacher (EMT) endorsement has been proposed for PreK–6 teachers whose primary responsibility is to work directly with students, either in a regular classroom setting, where the EMT is the principal mathematics teacher for groups of students, or in an intervention or support setting, where the EMT provides instruction for designated students. The EMT can also support school and district leadership with mathematics program development and home connections.

The EMT endorsement is not required in order for teachers to teach mathematics but would indicate teachers have more math content knowledge and pedagogical content knowledge.

13. * Should the state offer the Elementary Mathematics Teacher Endorsement?

- Yes
- No
The Elementary Mathematics Specialist (EMS) endorsement has been proposed for PreK–6 teachers who may have some responsibilities working with students but whose major work is supporting teachers and administrators as they implement their school’s mathematics program. The EMS typically coaches other teachers, designs and provides mathematics professional development for teachers and administrators, develops programs for parents, and provides leadership with the mathematics program at the school or district level. Proposed requirements for the EMS endorsement include all those for the EMT endorsement and additional requirements related to mathematics content, leadership, and working with adults.

The EMS endorsement is not required in order for teachers to coach colleagues but would indicate teachers have more math content knowledge, and pedagogical content knowledge and knowledge about supporting teachers’ learning and helping them improve their teaching.

14. * Should the state offer the Elementary Mathematics Specialist endorsement?
   - Yes
   - No

15. * Please indicate your agreement with the following statements.

If these endorsements were available, ...

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>... our district would encourage teachers to take courses toward the Elementary Mathematics Teacher Endorsement.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>... our district would encourage teachers to take courses toward the Elementary Mathematics Specialist Endorsement.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>... our district would encourage math/instructional coaches to take courses toward the Elementary Mathematics Specialist Endorsement.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>... our district would work with a local university to recruit teachers for courses toward these endorsements.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. Does your district provide tuition support/reimbursement for continuing education courses?
   - Yes
   - No
17. Please share any comments or questions you have about the elementary mathematics endorsements.

__________________________________________________________________________________

18. If you would like to receive information about these endorsements in the future, please provide your email address. [Checks for email format]

__________________________________________________________________________________

Thank you for completing this survey!
EMS Landscape Project FINAL Survey for Illinois Elementary Schools

[Note: An * indicates the question is required. Only questions that were the most critical were required. Anything in brackets was built into the online version of the survey. Participants can see what percent of the survey they have completed after they complete each web page.]

1. * What is the name of this school? ______________________________________

2. * In which town is this district located? _________________________________

3. * In which county is this district located? [Drop down list of all counties in Illinois.]

4. * What is the name of your school district? ______________________________

5. * Does this school include elementary grades, any grade K to 5? [This question is a branching question. Subsequent questions depend on how they answer this question.]
   - Yes [If selected, go to Q#6]
   - No [If selected, the survey ends]

Please provide information for the person completing this survey.

6. * Which of the following best describes your position?
   - Mathematics lead teacher or coach
   - Mathematics/STEM specialist
   - Regular classroom teacher
   - Principal assistant
   - Principal
   - Other (please specify):

7. How long have you worked in this district?
   - Less than 2 years
   - 2 to 5 years
   - 6 to 10 years
   - More than 10 years
Modified item from NSSME (2018 National Survey of Science and Mathematics Education)

8. To what extent would each of the following contribute to improving mathematics instruction in your school?

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little</th>
<th>Some</th>
<th>To a great extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing teachers’ math content knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increasing teachers’ pedagogical content knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increasing instructional time to teach mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increasing mathematics-related professional development opportunities (including in-school collaboration)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increasing the coaching support provided for teachers in mathematics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having teachers with significant content knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to teach mathematics in a ‘departmentalized/specialized’ organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. * Is one-on-one coaching in mathematics available to teachers in this school?
   - Yes [If selected, go to Q#10]
   - No [If selected, go to Q#12]
**Modified item from NSSME**

10. In your school, is one-on-one coaching provided by each of the following? [Select one on each row.]

<table>
<thead>
<tr>
<th>No</th>
<th>Yes, provides coaching only in mathematics</th>
<th>Yes, provides coaching in mathematics and other subject areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>The principal of the school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>An assistant principal at the school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>District administrators including mathematics supervisors/coordinators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers/coaches who do not have classroom teaching responsibilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers/coaches who have part-time classroom teaching responsibilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers/coaches who have full-time classroom teaching responsibilities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Modified item from NSSME**

11. What are the currently required qualifications in your district for individuals responsible for coaching teachers in mathematics? Check all that apply.

- Experienced math teacher
- Has extra formal coursework in teaching mathematics
- Has a degree or a minor in mathematics
- Has a middle grades math endorsement
- Has general knowledge of instructional improvement
- No special qualifications required
- Other: Please specify ________________________________
12. Which of these categories best describes the way math classes in this school are organized at each grade?

<table>
<thead>
<tr>
<th>Grade</th>
<th>Specialized/departmentalized instruction (when a teacher teaches more than one class of students in math, formally or informally)</th>
<th>self-contained (when a teacher teaches all subjects)</th>
<th>Self-contained but we may be interested in specialization/departmentalization</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. What are the criteria used to select teachers to teach specialized/departmentalized mathematics in this school? Check all that apply.

☐ Does not apply
☐ Experienced math teacher
☐ Has extra formal coursework in teaching mathematics
☐ Has a degree or a minor in mathematics
☐ Has a middle grades math endorsement
☐ Has general knowledge of instructional improvement
☐ No special qualifications required
☐ Other: Please specify ________________________________

Please read before answering the next question.

The Elementary Mathematics Teacher (EMT) endorsement has been proposed for PreK–6 teachers whose primary responsibility is to work directly with students, either in a regular classroom setting, where the EMT is the principal mathematics teacher for groups of students, or in an intervention or support setting, where the EMT provides instruction for designated students. The EMT can also support school and district leadership with mathematics program development and home connections.

**The EMT endorsement is not required in order for teachers to teach mathematics** but would indicate teachers have more math content knowledge and pedagogical content knowledge.

14. * Should the state offer the Elementary Mathematics Teacher Endorsement?

☐ Yes
☐ No
Please read before answering the next question.

The Elementary Mathematics Specialist (EMS) endorsement has been proposed for PreK–6 teachers who may have some responsibilities working with students but whose major work is supporting teachers and administrators as they implement their school’s mathematics program. The EMS typically coaches other teachers, designs and provides mathematics professional development for teachers and administrators, develops programs for parents, and provides leadership with the mathematics program at the school or district level. Proposed requirements for the EMS endorsement include all those for the EMT endorsement and additional requirements related to mathematics content, leadership, and working with adults.

The EMS endorsement is not required in order for teachers to coach colleagues but would indicate teachers have more math content knowledge, and pedagogical content knowledge and knowledge about supporting teachers’ learning and helping them improve their teaching.

15. * Should the state offer the Elementary Mathematics Specialist endorsement?
   - Yes
   - No

16. * Please indicate your agreement with the following statements.

If these endorsements were available, ...

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>... our school would encourage teachers to take courses toward the Elementary Mathematics Teacher Endorsement.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>... our school would encourage teachers to take courses toward the Elementary Mathematics Specialist Endorsement.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>... our school would encourage math/instructional coaches to take courses toward the Elementary Mathematics Specialist Endorsement.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

17. Does your district provide tuition support/reimbursement for continuing education courses?
   - Yes
   - No

18. Please share any comments or questions you have about the elementary mathematics endorsements.

19. If you would like to receive information about these endorsements in the future, please provide your email address. [Checks for email format]

Thank you for completing this survey!
APPENDIX C: EMS Pilot Program Teacher Survey

[Universities included these questions in their end-of-year survey. An online version of these questions was created and administered for one university which had already finished the course.]

Please take a few minutes to respond to the questions below.

1. How many years have you taught prior to this school year? ______ years

2. Please select which best describes your mathematics teaching responsibilities PRIOR to taking the courses?
   - I teach math to one classroom of students.
   - I teach math to more than one classroom of students.
   - I provide “pull-out” support for students who are struggling in math.
   - Other: Please describe __________________________________________________________

3. Please select which best describes your CURRENT mathematics teaching responsibilities?
   - I teach math to one classroom of students.
   - I teach math to more than one classroom of students.
   - I provide “pull-out” support for students who are struggling in math.
   - Other: Please describe __________________________________________________________

4. Are you middle-school math endorsed? □ Yes □ No

5. How have you changed your mathematics teaching practices since you began taking these courses?

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________
6. Please indicate your agreement with the following statements.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I have gained useful information that will help me work productively with other teachers to improve mathematics teaching and learning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. I feel more confident to collaborate with other teachers about mathematics teaching and learning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. I feel more prepared to support other teachers’ teaching of mathematics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. I feel more prepared to help a peer teacher with a math lesson.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. I feel more confident to advocate for supports teachers in my building need to improve mathematics instruction.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. Please indicate which of the following activities you have had an opportunity to do. [Check all that apply.]

<table>
<thead>
<tr>
<th>Activity</th>
<th>I have not done this</th>
<th>I did this before I took the courses</th>
<th>I have done this since taking the courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Provided another teacher with feedback on a lesson plan.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Observed a teacher and together, we reflected on the lesson.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Co-planned a math lesson with another teacher.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Examined student work from another classroom and worked with the teacher(s) to better understand students’ thinking.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Conducted a full coaching cycle with a teacher (pre- and post-observation conferences and lesson observation).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Provided professional development to a group of teachers in your school.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Modeled a lesson for another teacher.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Facilitated a grade level team meeting.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8. If you have provided other leadership activities at your school, please describe.


Thank you! You have completed the survey.
APPENDIX D: Interview Protocols

Interview protocol for state leaders

1. What is your current role and background?
2. Can you provide a brief history of how your state developed the endorsement and your role? Who identified the need and initiated the endorsements? Who encouraged and supported it?
3. What are the endorsements? (Review the EMS website before hand and ask clarifying questions.) Do you have a sense of how many endorsements have been awarded/granted?
4. How do you deal with the range of knowledge between elementary teachers and high school teachers?
5. What were the challenges in developing the endorsements and getting them approved by the state? What helped?
6. If they have an early mathematics teacher endorsement- What has been the Impact on teacher hiring?
7. Use of endorsements- How much demand is there for this endorsement? How are districts/schools utilizing individuals with this endorsement? Where are these teachers working, elementary or high schools or districts? How many districts have required/utilized this endorsement? Where did districts get their math leadership before?
8. Do these courses count towards a math master’s degree? How many more courses are need?
9. Are there any unintended consequences of having these endorsements?
10. What is the evidence that having the endorsements has improved mathematics teaching and learning in the state? Are there any studies that have been/or are being conducted?

Interview protocol for stakeholders (principals/teacher organizations and ROEs)

1. What is your current role and background? If ROE, please tell me about the districts you serve.
2. What are the biggest challenges facing mathematics teaching and learning?
3. Where are districts getting their math leaders? What preparation do these individuals have?
4. What do you think would contribute most to improvements in mathematics teaching and learning?
5. In what areas do you think teachers who teach mathematics in elementary school need more support or preparation?
6. Do you see any trends in your districts to specialize teaching in the elementary grades, similar to what is seen in middle school?
7. Do you see any trends in your districts to provide math coaching?
The Elementary Mathematics Teacher (EMT) endorsement has been proposed for PreK–6 teachers whose primary responsibility is to work directly with students, either in a regular classroom setting, where the EMT is the principal mathematics teacher for groups of students, or in an intervention or support setting, where the EMT provides instruction for designated students. The EMT can also support school and district leadership with mathematics program development and home connections.

The Elementary Mathematics Specialist (EMS) endorsement has been proposed for PreK–6 teachers who may have some responsibilities working with students but whose major work is supporting teachers and administrators as they implement their school’s mathematics program. The EMS typically coaches other teachers, designs and provides mathematics professional development for teachers and administrators, develops programs for parents, and provides leadership with the mathematics program at the school or district level. Proposed requirements for the EMS endorsement include all those for the EMT endorsement and additional requirements related to mathematics content, leadership, and working with adults.

What are your thoughts on these endorsements?

8. What do you think would be important to include in a program that helps prepare teachers to specialize in teaching mathematics in the elementary mathematics?

9. What do you think would be important to include in a program that helps prepare teachers to coach teachers in mathematics at the elementary level?

10. Do you think districts would utilize these endorsements? How could districts use teachers with these endorsements? Would districts subsidize the courses?

11. What are the potential challenges for having these endorsements? What unintended consequences could result from having these elementary math endorsements?

12. Do you think the ROE might develop a partnership with an area university and coordinate a cohort program to take classes toward these endorsements?

13. Do you want to be informed of progress on these endorsements?

14. Might you be willing to write/sign a letter of support for the endorsements to the Illinois State Board of Education?
Elementary Mathematics Specialists Endorsements Interviews

Interview protocol for universities

In the past year, personnel from three universities spearheaded the development of proposals to the Illinois State Board of Education (ISBE) to establish two new teaching credentials for elementary school teachers who specialize in the teaching of mathematics. These two new endorsements are intended for teachers who already hold a Professional Educator’s License but are not intended to add new requirements for hiring. Rather they are intended to provide pathways to help elementary teachers deepen their knowledge of mathematics teaching and learning, and for districts and schools to strengthen their mathematics leadership.

Teacher educators from 14 Illinois universities and colleges, personnel from two ISBE Intermediate Service Centers, leaders from school districts across the state, and mathematics education leaders provided input into the development of the two proposals.

These endorsements are:

The Elementary Mathematics Teacher (EMT) endorsement has been proposed for PreK–6 teachers whose primary responsibility is to work directly with students, either in a regular classroom setting, where the EMT is the principal mathematics teacher for groups of students, or in an intervention or support setting, where the EMT provides instruction for designated students. The EMT can also support school and district leadership with mathematics program development and home connections.

The Elementary Mathematics Specialist (EMS) endorsement has been proposed for PreK–6 teachers who may have some responsibilities working with students but whose major work is supporting teachers and administrators as they implement their school’s mathematics program. The EMS typically coaches other teachers, designs and provides mathematics professional development for teachers and administrators, develops programs for parents, and provides leadership with the mathematics program at the school or district level. Proposed requirements for the EMS endorsement include all those for the EMT endorsement and additional requirements related to mathematics content, leadership, and working with adults.
1. What are your thoughts on these endorsements?

2. What do you think would be important to include in a program that helps prepare teachers to specialize to teach mathematics in the elementary mathematics (Elementary Mathematics Teacher endorsement)?

3. What do you think would be important to include in a program that helps prepare teachers to coach teachers in mathematics at the elementary level (Elementary Mathematics Specialist endorsement)?

4. Does your university offer courses or degree programs that lead to the reading teacher and/or reading specialist endorsements?

5. If the state were to approve these endorsements, could you imagine that there might be interest at your university to develop a program to prepare educators for these endorsements? Which one? Why?

6. Historically, some universities began offering continuing education courses for teaching mathematics in the middle grades before offering full programs in teaching middle grades mathematics. Might your university consider doing the same with courses that lead to an elementary math endorsement? Would you be willing to have a conversation with your departmental committee that looks at developing new courses to see if there might be interest in developing courses that could apply to the elementary mathematics endorsements noted above?

7. Might you be willing to write/sign a letter of support for the endorsements to the Illinois State Board of Education?
APPENDIX F: Additional EMS School Figures

School EMS Survey Completed Most by Principals

- Principal: 86%
- Other: 1%
- Mathematics lead teacher or coach: 1%
- Mathematics/STEM specialist: 3%
- Assistant principal: 8%
- Regular classroom teacher: 1%

$n = 110$, missing = 0

Most Respondents Have Worked in Their Districts for More than 10 Years

- More than 10 years: 55%
- 2 to 5 years: 22%
- 6 to 10 years: 12%
- Less than 2 years: 11%

$n = 110$, missing = 0

Responses from Schools Throughout the State

- Northeast: 49%
- Southeast: 22%
- Northwest: 14%
- Southwest: 10%
- East Central: 3%
- West Central: 2%

$n = 110$, missing = 0
Increasing Mathematics-related Professional Development Opportunities, Coaching Support, and Teachers’ Pedagogical Content Knowledge Seen as Contributing the Most to Improving Mathematics Instruction

- Increasing mathematics-related professional development opportunities (including in-school collaboration): 64% (A lot), 26% (Some), 10% (A little), 0% (Not at all)
- Increasing the coaching support provided for teachers in mathematics: 63% (A lot), 26% (Some), 9% (A little), 2% (Not at all)
- Increasing teachers’ pedagogical content knowledge: 62% (A lot), 34% (Some), 4% (A little), 12% (Not at all)
- Increasing teachers’ math content knowledge: 52% (A lot), 39% (Some), 8% (A little), 1% (Not at all)
- Having teachers with significant content knowledge teach mathematics in a ‘departmentalized or specialized’ organization: 37% (A lot), 40% (Some), 15% (A little), 8% (Not at all)
- Increasing instructional time to teach mathematics: 34% (A lot), 45% (Some), 17% (A little), 5% (Not at all)

n = 110, missing = 0 (for instructional time, n = 109, missing = 1)

ENDORSEMENTS

Majority of Schools Indicated Illinois Should Offer the Elementary Mathematics Specialist Endorsement

- Yes: 90%
- No: 10%

n = 105, missing = 5
Most School Staff Indicated Illinois Should Offer the Elementary Mathematics Specialist Endorsement

- Assistant principal: 100%
- Mathematics lead teacher or coach: 100%
- Mathematics/STEM specialist: 100%
- Other: 88% Yes, 13% No
- Principal: 89% Yes, 11% No
- Regular classroom teacher: 100%

n = 105, missing = 5

Majority of Schools Indicated Illinois Should Offer the Elementary Mathematics Teacher Endorsement

- Yes: 90%
- No: 10%

n = 105, missing = 5
Majority of School Staff Indicated the State Should Offer the Elementary Mathematics Teacher Endorsement

- Assistant principal: 100%
- Mathematics lead teacher or coach: 100%
- Mathematics/STEM specialist: 100%
- Other: 100%
- Principal: 89% Yes, 11% No
- Regular classroom teacher: 100%

n = 105, missing = 5

Tuition Support, Coaching and Specialization

Majority of Schools Are in Districts that Offer Tuition Support

- Tuition support: 60%
- No tuition support: 40%

n = 105, missing = 5
Less than 30% of the schools that responded indicated that their district provides coaching.

### Coaching Support Provided Most Often by Full-time Coaches

![Coaching Support Provided Most Often by Full-time Coaches](image)

- **Teacher (teaches part-time)**: 89% provides coaching in mathematics, 4% provides coaching in mathematics and other subject areas, 7% does not provide coaching in mathematics.
- **Teacher (teaches full-time)**: 75% provides coaching only in mathematics, 11% provides coaching in mathematics and other subject areas, 14% does not provide coaching in mathematics.
- **Assistant Principal**: 68% provides coaching only in mathematics, 29% provides coaching in mathematics and other subject areas, 4% does not provide coaching in mathematics.
- **District Administrator**: 50% provides coaching only in mathematics, 32% provides coaching in mathematics and other subject areas, 18% does not provide coaching in mathematics.
- **Full-time Coach**: 39% provides coaching only in mathematics, 36% provides coaching in mathematics and other subject areas, 25% does not provide coaching in mathematics.
- **Principal**: 37% provides coaching only in mathematics, 63% does not provide coaching in mathematics.

\( n = 27 \text{ to } 28, \text{ missing } = 3 \text{ to } 4 \)

### Experience as a Math Teacher and General Knowledge of Instructional Improvement Most Cited Qualifications for Individuals Coaching Teachers in Mathematics

![Experience as a Math Teacher and General Knowledge of Instructional Improvement Most Cited Qualifications for Individuals Coaching Teachers in Mathematics](image)

- **Experienced math teacher**: 70%
- **Has general knowledge of instructional improvement**: 70%
- **No specific qualification required**: 63%
- **Has extra formal coursework in teaching mathematics**: 37%
- **Has a degree or a minor in mathematics**: 36%
- **Has a middle grades math endorsement**: 25%
- **Other qualification**: 14%

\( n = 30, \text{ missing } = 1; \text{ schools could have selected multiple responses} \)
Departmentalized Mathematics Classes Occur Most Often in Upper Elementary Grades

Middle Grades Math Endorsement and Being an Experienced Math Teacher Most Cited Qualifications for Teachers Specializing in Mathematics Teaching

$n = 101$ to $102$, missing $= 8$ to $9$

$n = 105$, missing $= 5$; schools could have selected multiple responses
APPENDIX G: Comments on the EMS District Survey

Comments (unedited)

All of our K-5 teachers would benefit from content focused coursework. Teaching mathematics is very challenging for most all of our teachers.

Can be an extra layer of support. Can be viewed as an attempt to create a quasi-administrative role (which can be negative or positive).

For Question 14 - reimbursement is only for credits toward the first Master’s Degree.

For self-contained elementary teachers, increasing pedagogical knowledge and understandings of how student best learn mathematics is essential. Too many of them are teaching the way they were taught, which provides a very limited scope of mathematics. “Traditional” math instruction is too procedural that lacks reasoning and flexibility. An endorsement would be very welcome.

Adding more endorsements only complicates licensure and is overkill. We are already pursuing professional development, instructional coaching, and opportunities for our math teachers to continue to improve. This is absolutely unnecessary.

I am concerned that this endorsement would some day become required for our teachers.

I am curious why there is any downside, is the fear that people wouldn’t value them so people might not pursue them?

I believe the state should be putting more effort into addressing the teacher shortage before looking to add more endorsements. Problems such as why can’t my kindergarten teacher of 10 plus years teach pre-k without completing a whole program again. Math teachers are hard enough to come by; I cannot support this initiative until more pressing matters are resolved.

I feel an endorsement such as the 2 proposed in this survey should offer transcript reviews and take into consideration advance coursework to be applied.

I have indicated that the State should offer the endorsements. I admit that I was hesitant because although it is stated that the endorsement would not be required to teach mathematics, I’ve seen the State change course many times and if the endorsement were required, I would not support the creation of the endorsement.

I like the idea, but the reality is we can not find certified math teachers as it is, I doubt this would help our current situation. If the teaching market changes and we have more math teachers to hire I would revisit this idea.

I realize that it states that the endorsement won’t be required for hiring, I don’t trust that it won’t evolve into this as most things occur in this state. This takes away flexibility from the District. We train our math instructional coaches, we don’t need the state to dictate what we do.

I would be happy to pass along any information to the teaching staff in the district.
I would love for something similar for ELA at the elementary level.

NA
Na
none
None
None at this time.

I’m more interested in the EMS endorsement as I think it would really help support our coaches and specialized PD. I think the EMT sounds good in theory, but could lead to departmentalization at the earliest grades (K-4) which I don’t think is appropriate. I think K-4 would be better served by an EMS coach otherwise I think we risk overly “academic” early learning experiences.

In a teacher shortage, I don’t see this as a viable option for districts

In reference to #14- the traditional salary schedule provides incentive for classes taken

Math should be improved at the University/College level for Elementary Teachers. There are many courses for ELA, but not as much required for math.

More cohorts are needed in the South Cook area for teachers to acquire Middle School Math Endorsements. This is a significant concern from many of our staff.

Our district DOES have some one on one support, but it is through general curriculum coaches that service the entire district. Also, while I agree with the idea for the endorsements, I am leery about telling teachers to spend more on their education, while most are still paying off their student loans.

Tuition reimbursement is available in our district, but limited to a “pool” amount.

Please provide/encourage flexible coursework credentialing. Many educators are looking for intensive/digital programs more than the traditional 16–18 weeks model.

Providing elementary teachers with extra training in mathematics pedagogy is crucial as expectations in mathematical knowledge for students and pedagogy for teachers has changed dramatically in the last 10 years. These endorsements would certainly encourage pre-service teachers to become math specialists and in turn influence those teachers around them who are not.

The majority of elementary teachers are very strong ELA, but do not feel as confident in their mathematics instruction and content knowledge.

The more confident our teachers become teaching mathematics the more successful our students will be. The endorsements are needed.

The universities need to help the teachers with more course work at the undergraduate level

There is already a teacher shortage so requiring a new math endorsement would not be a good idea.

These math endorsements will be most effective for districts so long as they are not required as stated above. Oftentimes, a person holding the certification may not have the collaborative/leadership skills necessary to coach teachers with the purpose of improving instruction. We must have the flexibility to put the best person in coaching positions, regardless of certification.
This has to remain as an option or we, once again, create an issue for ourselves. I love the idea because it encourages getting better as an educator. Please never make it a requirement at any grade level K-6.

This is a terrific idea.

This is an excellent idea. I think Mathematics is one area that needs additional supports. District 87 would welcome this opportunity with Illinois State University.

This is long overdue!

What is the research base around students switching classes in elementary school?

When will these endorsements be available?

While we would be happy to see this programs offered, we also realize there is a teacher shortage. Our primary focus is finding qualified teachers in all of our classrooms. I would want to be sure this does NOT require an additional certification avenue, when finding math teachers is already incredibly difficult.

With all of the requirements already placed on teachers and the shortage of teachers I would be careful trying to push any more requirements. This is why I chose an endorsement.

Yes, this is greatly needed but the preparation/courses must be high quality and cover content knowledge, pedagogy, and design of math formative and summative assessments.

We are having trouble finding teachers. Specialization does not help rural schools find teachers. This specialization is what helped get us into this mess in the first place. I would be reluctant to make specific changes in our state relying upon the state tests alone.

We currently are having issues filling positions. What we need is to allow teachers the opportunity to teach a wider area of their concentration to fill vacancies within districts.

We do NOT want to see this as a requirement. We already struggle to find applicants with the new licensure requirements. Adding this as a requirement would further hamstring us. We completed this survey with the mindset that these endorsement offering would be optional. If these would be required, we would have completed this survey VERY DIFFERENTLY.

We have just this year implemented Instructional Coaches at all levels. We have selected one Instructional Coach at the elementary levels that specializes in mathematics and two at the Junior High/High School Level.

We have many teachers that are interested in pursuing an EMT endorsement. Currently, our teachers pursue middle school math endorsements to increase their knowledge of mathematics education. Many educators would be interested in the opportunity to pursue a degree that was more applicable to their grade band.

This should not be a requirement. Only an option if teachers want to further their education.
Elementary Mathematics Specialists in Illinois
A Landscape Study of Statewide Interest and Need

By Gudelia López, PhD, and Martin Gartzman
July 2020