Math@Distance: distance mathematics teaching during COVID-19 lockdown

Paul Drijvers

Moving Forward in the Midst of a Pandemic: International Lessons for Math Teachers
Hosted by the U.S. National Commission of Mathematics Instruction
– National Academies of Sciences, Engineering, and Medicine

July 9, 2020
Kabinet sluit alle scholen en horeca

Alle scholen, kinderdagverblijven, horeca en sportclubs in Nederland valt stil. Om de verspreiding van het coronavirus te vertragen, heeft het kabinet een ongekend pakket aan maatregelen aangekondigd. Wie verkouden is, moet thuis werken, wie niet verkouden is liefst ook.

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In de nieuwsberichten vandaag werden de maatregelen voor scholen en horeca besproken. Het kabinet heeft besloten dat alle scholen en kinderdagverblijven tot en met 6 april dicht moeten gaan. Dit om de verspreiding van het coronavirus te beperken.

Onderwijsminister Ankie Broekers-Knol en sociale zekerheid minister Hans Wiegel hebben verklaard dat deze maatregelen noodzakelijk zijn om de belasting op de ziekenhuizen te verminderen. Ze gaven aan dat er momenteel adequate zorgvulling voor de patiëntendiensten is, maar er behoefte is aan meer capaciteit om het virus te bestrijden.

Vragen om de sluiting van scholen en horeca zijn opgevangen met teleurstelling. In het onderwijsveld en in het horeca-sector zijn veel kiemen en vertragingen opgetreden. Onderwijsminister Broekers-Knol heeft aangegeven dat er gepland is om de maatregelen na deze periode te herzien.
Today’s main questions

1. What is happening in math ed in COVID times?

2. What can we do?
Who am I?

• Math ed researcher with an interest in digital technology
• Teacher trainer

• Disclaimers:
  ➢ Not a math teacher
  ➢ Preliminary results

Math@Distance: distance mathematics teaching during COVID-19 lockdown

Part 1 in the webinar series,
“Moving Forward in the Midst of a Pandemic: International Lessons for Math Teachers”

Hosted by the U.S. National Commission of Mathematics Instruction – National Academies of Sciences, Engineering, and Medicine

A talk by Paul Drijvers, Professor in Mathematics Education, Freudenthal Institute, Utrecht University, The Netherlands (pictured below)

The COVID-19 pandemic has drastically impacted education. Schools closed down and mathematics teachers were facing the challenge of developing alternative educational practices, including at distance through digital technology. What distance practices emerged in secondary mathematics education? To find this out, we sent out online questionnaires in three adjacent countries in Europe: Flanders—the Dutch-speaking part of Belgium—Germany, and the Netherlands. The survey focused on teaching practices, teacher beliefs, didactics and assessment. In this talk, Prof. Paul Drijvers (Freudenthal Institute) will summarize the first tentative findings, and reflect on their meaning for mathematics teachers.

Thursday, July 9, 2020 from 11:00 a.m. to 12:00 p.m. EDT via Zoom

Registration for this webinar is free. To register, please visit our Eventbrite page:

Please also join us on Thursday, July 16, 11 am EDT for Part 2, featuring Talil Nachlieli, Head of the Mathematics Education Department, Leviathan College of Education (Israel), and on Thursday, July 23, 11 am EDT, for Part 3, featuring Salome Martínez, Director of the Laboratory of Mathematical Education, Universidad de Chile (Chile).
Who are you (1)?

Where are you based?
- Africa
- Asia
- Australia
- Europe
- North-America
- South-America
Who are you (2)?

What are you?

- A math teacher in primary school (4-11-year-old pupils)
- A math teacher in lower secondary (12-15-year-old students)
- A math teacher in upper secondary (16-18-year-old students)
- A math teacher in tertiary education
- A mathematician
- A math education researcher
- A math teacher educator
- A non-classroom-teacher school system employee
- Other
Part 1: What is happening in math ed in Covid times?

• The Math@Distance study by Drijvers and colleagues: Distance mathematics teaching in Flanders, Germany and the Netherlands during COVID-19 lockdown
• Related studies by Aldon and colleagues, and Trouche and colleagues
The Math@Distance study

Research Team:
• Paul Drijvers, Utrecht University, Utrecht, the Netherlands
• Daniel Thurm, Universität Duisburg-Essen, Essen, Germany
• Ellen Vandervieren, University of Antwerp, Antwerp, Belgium
• Marcel Klinger, Universität Duisburg-Essen, Essen, Germany
• Filip Moons, University of Antwerp, Antwerp, Belgium
• Heleen van der Ree, Utrecht University, Utrecht, the Netherlands
• Amy Mol, Utrecht University, Utrecht, the Netherlands
• Bärbel Barzel, Universität Duisburg-Essen, Essen, Germany
• Michiel Doorman, Utrecht University, Utrecht, the Netherlands
Research Questions

What distance practices in secondary mathematics education have emerged in Flanders, Germany and the Netherlands in the recent period of school lockdown and how did teachers experience them?

1. Which teaching practices?
2. Relation to teachers’ beliefs?
3. Influence on didactic approach?
4. Which assessment formats?
Research Methods

Online questionnaires
• For math teachers and their students
• In Flemish, German and Dutch
• Through Qualtrics ©
• Analysis through SPSS ©
## Respondents

<table>
<thead>
<tr>
<th>Country</th>
<th>#Teachers</th>
<th>#Students</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flanders</td>
<td>384</td>
<td>1244</td>
<td>6.6M</td>
</tr>
<tr>
<td>Germany</td>
<td>1131</td>
<td>283</td>
<td>83.0M</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>204</td>
<td>338</td>
<td>17.3M</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1719</strong></td>
<td><strong>2565</strong></td>
<td><strong>17.3M</strong></td>
</tr>
</tbody>
</table>
Teachers’ age and gender

Table 1. Teacher gender for the participating countries

<table>
<thead>
<tr>
<th>Gender</th>
<th>Flanders</th>
<th>Germany</th>
<th>The Netherlands</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>287 (74.7%)</td>
<td>637 (56.7%)</td>
<td>113 (55.7%)</td>
<td>1,037 (60.6%)</td>
</tr>
<tr>
<td>Male</td>
<td>96 (25.0%)</td>
<td>485 (43.1%)</td>
<td>90 (44.3%)</td>
<td>671 (39.2%)</td>
</tr>
<tr>
<td>Other</td>
<td>1 (0.3%)</td>
<td>2 (0.2%)</td>
<td>0 (0.0%)</td>
<td>3 (0.2%)</td>
</tr>
<tr>
<td>Missing</td>
<td>0 (0.0%)</td>
<td>7 (0.6%)</td>
<td>1 (0.5%)</td>
<td>8 (0.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>384 (100%)</td>
<td>1,131 (100%)</td>
<td>204 (100%)</td>
<td>1,719 (100%)</td>
</tr>
</tbody>
</table>
Results

1. Which teaching practices?
2. Relation to teachers’ beliefs?
3. Influence on didactic approach?
4. Which assessment formats?
## Results teaching practices: delivery tools before and since lockdown

<table>
<thead>
<tr>
<th></th>
<th>Flanders (N=384)</th>
<th></th>
<th>Germany (N=1131)</th>
<th></th>
<th>The Netherlands (N=204)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before</td>
<td>Since</td>
<td>Before</td>
<td>Since</td>
<td>Before</td>
<td>Since</td>
</tr>
<tr>
<td>Video conferencing software</td>
<td>6.5%</td>
<td>86.7%</td>
<td>3.6%</td>
<td>55.9%</td>
<td>9.4%</td>
<td>96.6%</td>
</tr>
<tr>
<td>Social media</td>
<td>17.2%</td>
<td>6.0%</td>
<td>6.7%</td>
<td>9.4%</td>
<td>21.2%</td>
<td>6.9%</td>
</tr>
<tr>
<td>Learning management system</td>
<td>68.5%</td>
<td>68.2%</td>
<td>39.5%</td>
<td>56.3%</td>
<td>96.6%</td>
<td>74.5%</td>
</tr>
<tr>
<td>Online video clips</td>
<td>45.3%</td>
<td>40.6%</td>
<td>70.6%</td>
<td>61.1%</td>
<td>80.9%</td>
<td>59.3%</td>
</tr>
<tr>
<td>Online exercisers</td>
<td>56.5%</td>
<td>18.8%</td>
<td>23.0%</td>
<td>19.1%</td>
<td>53.9%</td>
<td>13.7%</td>
</tr>
<tr>
<td>Online learning environments</td>
<td>75.8%</td>
<td>25.0%</td>
<td>65.8%</td>
<td>26.2%</td>
<td>64.7%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Homemade video clips</td>
<td>19.3%</td>
<td>66.7%</td>
<td>16.3%</td>
<td>33.3%</td>
<td>26.2%</td>
<td>27.5%</td>
</tr>
<tr>
<td>Audience response systems</td>
<td>45.8%</td>
<td>12.5%</td>
<td>31.2%</td>
<td>9.7%</td>
<td>53.2%</td>
<td>26.5%</td>
</tr>
</tbody>
</table>

. (p<.1), * (p<.05), ** (p<.01) en *** (p<.001)
Results teaching practices:
frequency of synchronous format use

country
- Flanders
- Germany
- The Netherlands

Percent

- Never: Flanders 8.85%, Germany 3.45%, The Netherlands 0.49%
- Only once: Flanders 1.82%, Germany 8.39%, The Netherlands 3.39%
- Ca. once a month: Flanders 5.40%, Germany 0.99%, The Netherlands 3.91%
- Ca. 2x a month: Flanders 7.87%, Germany 1.48%, The Netherlands 3.91%
- Ca. once a week: Flanders 36.20%, Germany 28.08%, The Netherlands 45.83%
- Multiple times a week: Flanders 65.52%, Germany 19.58%, The Netherlands 45.83%
Results teaching practices: synchronous and asynchronous formats

Synchronous formats:
- video conferencing
- simultaneous work in shared document
- live chats

Asynchronous formats:
- forum
- sending out exercises via mail
Results teaching practices: what do you do in video conference lessons?
Results teacher beliefs

• Teachers like working with technology (mean 4.60 on 1-6 Likert scale)
• This correlates with confidence before and after lockdown ($\tau = 0.42$, $\tau = 0.43$)
• And with their experience in using digital tools ($\tau = 0.23$)
• Some believe distance learning supports teaching algorithms (mean 4.11 on 1-6 Likert scale)
• Some believe distance learning provides means to make students discover mathematics on their own (mean 3.38 on 1-6 Likert scale)
# Results didactic approach in distance lessons

<table>
<thead>
<tr>
<th>Focus</th>
<th>Flanders Mean (SD)</th>
<th>Germany Mean (SD)</th>
<th>The Netherlands Mean (SD)</th>
<th>Total Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Rehearsing practicing</td>
<td>2.83 (1.55)</td>
<td>4.03 (1.56)</td>
<td>1.76 (1.05)</td>
<td>3.49 (1.71)</td>
</tr>
<tr>
<td></td>
<td>384</td>
<td>1118</td>
<td>204</td>
<td>1706</td>
</tr>
<tr>
<td>New topics</td>
<td>5.29 (0.84)</td>
<td>4.22 (1.38)</td>
<td>5.07 (1.01)</td>
<td>4.56 (1.33)</td>
</tr>
<tr>
<td></td>
<td>384</td>
<td>1128</td>
<td>204</td>
<td>1716</td>
</tr>
<tr>
<td>Conceptual understanding</td>
<td>4.51 (1.21)</td>
<td>3.62 (1.42)</td>
<td>4.27 (1.22)</td>
<td>3.90 (1.41)</td>
</tr>
<tr>
<td></td>
<td>384</td>
<td>1106</td>
<td>202</td>
<td>1692</td>
</tr>
<tr>
<td>Procedures algorithms</td>
<td>3.95 (1.41)</td>
<td>3.97 (1.41)</td>
<td>3.79 (1.44)</td>
<td>3.94 (1.41)</td>
</tr>
<tr>
<td></td>
<td>384</td>
<td>1104</td>
<td>202</td>
<td>1690</td>
</tr>
</tbody>
</table>
In times of school closure, my math lessons focus on rehearsing and practicing topics that the students already knew.
Results assessment

<table>
<thead>
<tr>
<th>Assessment focus</th>
<th>Flanders Mean (SD)</th>
<th>Germany Mean (SD)</th>
<th>The Netherlands Mean (SD)</th>
<th>Total Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executing algorithms and procedures</td>
<td>4.45 (1.41)</td>
<td>4.23 (1.60)</td>
<td>4.20 (1.60)</td>
<td>4.30 (1.57)</td>
</tr>
<tr>
<td></td>
<td>371</td>
<td>1060</td>
<td>185</td>
<td>1616</td>
</tr>
<tr>
<td>Concepts and understanding</td>
<td>4.31 (1.40)</td>
<td>3.67 (1.77)</td>
<td>3.78 (1.50)</td>
<td>3.83 (1.50)</td>
</tr>
<tr>
<td></td>
<td>372</td>
<td>1058</td>
<td>186</td>
<td>1616</td>
</tr>
<tr>
<td>Argumentation and reasoning</td>
<td>2.64 (1.54)</td>
<td>2.87 (1.43)</td>
<td>2.88 (1.48)</td>
<td>2.82 (1.50)</td>
</tr>
<tr>
<td></td>
<td>371</td>
<td>1047</td>
<td>186</td>
<td>1604</td>
</tr>
<tr>
<td>Authentic complex mathematical activity</td>
<td>2.09 (1.42)</td>
<td>2.34 (1.80)</td>
<td>2.30 (1.49)</td>
<td>2.28 (1.40)</td>
</tr>
<tr>
<td></td>
<td>371</td>
<td>1044</td>
<td>184</td>
<td>1599</td>
</tr>
</tbody>
</table>

My mathematics assessment formats that I used since the schools closed down focused on ...
Results crossing four themes

• School technical facilities and support may hinder video conferencing (Germany)

• Initial opinion, confidence, and experience are not decisive for engaging in (synchronous) teaching practices...

• ... but do impact views on digital assessment
Gilles Aldon et al.

- Teaching mathematics in a context of lock-down: a study focused on teachers' praxeologies in France, Germany, Israel, and Italy

http://revue.sesamath.net/spip.php?article1360
Luc Trouche

- 13 primary teachers in Shanghai
- Animation videos
- Video conferencing
- Collaboration

http://www.cafepedagogique.net/LEXPRESSO/Pages/2020/06/09062020Article637272874349312877.aspx?actId=ebwp0YMB8s1_OGEGSsDRkNUc
(Preliminary) Conclusion Part 1

What is happening in math ed in COVID times?
• Teachers engage *en masse* in video conferencing
• Teachers use general educational tools rather than mathematical tools
• They report not to focus just on rehearsal / practice / procedures, but also on conceptual understanding
• Interaction seems limited
• Teachers’ attention seems so much taken by that, that they may tend to forget about their didactic ideas on “good” math teaching
Part 2: What can we do?

a. Teaching practices
b. Teaching content
c. Teaching support policies
a. Teaching practices: NCTM

JUNE 2020
Moving Forward:
Mathematics Learning in the Era of COVID-19

We live in uncertain times. Public health is at the forefront of our minds, and our schools have been disrupted in ways we have never seen. Although no one can predict how education might look in the coming months, it is in the best interests of our students to strategize how we might best meet their needs in the upcoming months. Moving Forward is the result of a joint effort of NCSM: Leadership in Mathematics Education (NCSM) and the National Council of Teachers of Mathematics (NCTM) that presents considerations, questions, and potential solution processes to educators and school leaders to address the challenges induced by the COVID-19 pandemic of spring 2020. In this document, we show how effective practices for mathematics teaching and learning can provide helpful direction to address the challenges that teachers, school leaders, and policymakers face now and will continue to face in the months ahead.

This document is organized around three major areas that require consideration when planning for the 2020–2021 school year. These three areas have serious implications for equitable access to high-quality mathematics teaching and learning: (1) structural considerations, (2) teaching practices, and (3) advocacy.

THREE AREAS WITH SERIOUS IMPLICATIONS FOR EQUITABLE ACCESS TO HIGH-QUALITY MATHEMATICS TEACHING AND LEARNING

https://www.nctm.org/uploadedFiles/Research_and_Advocacy/NCTM_NCSM_Moving_Forward.pdf
a. Teaching practices: instrumental orchestration

- Technical-demo
- Guide-and-explain
- Link-screen-board
- Discuss-the-screen
- Explain-the-screen
- Spot-and-show
- Sherpa-at-work
- Board-instruction

- Technical-demo
- Guide-and-explain
- Link-screen-paper
- Discuss-the-screen
- Technical-support

Drijvers, Tacoma, Besamusca, Doorman, & Boon (2013, ZDM)
I want... (1) to write “life” on a board, rather than to spend hours preparing ppts with equation editors
I want... (2) my students to write, instead of type

Tools available that ...
• ... allow for writing, like on scratch paper
• ... including drawings and diagrams
• ... and even interpret the input
• ... and provide intelligent feedback

See https://www.numworx.nl/en/
I want... (3) to see my students’ work

Tools available to...
• ... upload student work
• ... comment and grade

e.g., MijnSchrift.nl
I want... (4) to discuss my students’ work with them, to foster interaction and discussion

Tools available to...

• ... make students send in (pictures of) their work
• ... show these as icons
• ... select and enlarge
• ... discuss, explain, comment...

Cf. Spot-and-Show orchestration

https://classkick.com/
https://www.lessonup.com/en/
http://www.rayclass.com/
I want... (5) to deliver hybrid teaching

Technology available to...
• ... teach at distance in a virtual classroom
• ... combine this with students present F2F
• ... and in this way set up hybrid teaching
• ... for students at distance / ill / unable to attend ...

Less sophisticated: use IWB in combination with video conference https://teachinglearninglab.nl/virtual-classroom/
I want... (6) to my kids to catch up with what they missed over the last months

Set up peer instruction through...
• ... assigning buddy students
• ... preparing the buddy students to their role
• ... organizing peer teaching
• ... think about rewards
b. Teaching content: media on COVID
b. Teaching content: media on COVID

BIJNA 1,3 MILJOEN BESMETTINGEN IN ÉÉN WEEK
Aantal gemelde covid-19-besmettingen per week
1.500.000

Bron: ECDC, analyse de Volkskrant

© Volkskrant, July 6, 2020
Leuk zo'n bloedtest. Maar kunt u daarna weer naar buiten?

Coronavirus Wildgroei aan bloedtests

Heeft u het coronavirus nou al gehad of niet? Om dat uit te zoeken, zijn de ogen steeds meer gericht op bloedtests. Goed om in te schatten hoever het virus in een land is opgerukt – maar over de vraag of u weer naar buiten kunt, zegt het toch wat minder.

Van DOOR MAARTEN KEULEMANS
BEDRIEGLIJK TESTEN OP ANTISTOFFEN

1. Stel: van duizend mensen heeft 2% corona gehad...
   → 20 personen

2. Met een 75% gevoelige* test, testen van hen 15 positief

3. Van de groep niet-besmette mensen (980) test 5% onttrech positief**
   → 49 personen

5 besmetten
   → 1.000
   ← 980

testen dus negatief

* Gevoeligheid geeft aan welk percentage van de besmettingen aangetoond wordt.
** Percentage dat de test per ongeluk aanslaat bij iemand die de antistoffen niet heeft.
Data destilled (not trivial!): 

- 2% of the population is infected
- The test detects infection in 75% of the infected cases
- For 5% of the non-infected cases, the test gives a false positive result

- If a test result is positive, how likely is it that this indeed indicates infection?

- Please enter your guess in the Zoom poll

- Less than 25%
- Between 25% and 50%
- Between 50% and 75%
- Above 75%
## Strategy: start with 1000 persons

<table>
<thead>
<tr>
<th></th>
<th>Infected</th>
<th>Non-infected</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test positive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test negative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>1000</td>
</tr>
</tbody>
</table>
## Solution

<table>
<thead>
<tr>
<th></th>
<th>Infected</th>
<th>Non-infected</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test positive</strong></td>
<td>15</td>
<td>49</td>
<td>64</td>
</tr>
<tr>
<td><strong>Test negative</strong></td>
<td>5</td>
<td>931</td>
<td>936</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20</td>
<td>980</td>
<td>1000</td>
</tr>
</tbody>
</table>

\[
P(\text{person infected} | \text{test positive}) = \frac{15}{64} \approx 0.23
\]

- ✓ Less than 25%
- ❏ Between 25% and
- ❏ Between 50% and
- ❏ Above 75%
c. Teaching Support Policies

- School level: co-teaching
- School level: technical facilities (school, home, students)
- District level: assessment regulations
- District level: technical facilities (school, home, students)
- District level: pedagogical support and guidelines
- State/national level: advocacy for equity
- State/national level: funding opportunities for the above
Conclusion Part 2: What can we do?

• Teaching practices:
  Many technical means available to get back to the pedagogical principles and views you had before COVID-19
• Teaching content:
  Several opportunities for mathematics teaching in COVID-19 data
• Teaching support policies:
  Support is needed at levels of school, district and state/nation
Overall conclusion/recommendation

• Worldwide, math teachers engaged in distance teaching practices, with video conferencing getting popular
• This may have caused us to “forget” the math tools and math didactic approaches
• So, now that we’ve learned a lot, let’s go for more rich, didactic and interactive distance teaching practices!
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Paul Drijvers

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- National Academies of Sciences, Engineering, and Medicine

July 9, 2020
Q & A Time

Remember to place your questions in the ZOOM Q & A section.

Please complete the webinar survey.


• Link available in chat box
Moving Forward in the Midst of a Pandemic: International Lessons for Math Teachers

Secondary-school mathematics: Looking ahead, an Israeli perspective
Part 2 in the webinar series, “Moving Forward in the Midst of a Pandemic: International Lessons for Math Teachers”

Hosted by the U.S. National Commission on Mathematics Instruction – National Academies of Sciences, Engineering, and Medicine
A talk by Tali Nischel, Head, Mathematics Education Department, Levinsky College of Education ( pictured below)

This time of uncertainty has brought with it a need for quick changes in teaching and learning. Now, after initial reactions to the requirement for remote teaching, and towards the next year, we ask: what could, or perhaps should, be breached in classroom teaching to provide math students with rich learning opportunities? This question is asked in the context of arguments regarding the environment in which learning would take place. In this talk, we will address this question from different perspectives - the ministry of education in Israel, teachers, teacher educators and researchers, as we all prepare for the coming year.

Thursday, July 16, 2020 from 11:00 a.m. to 12:00 p.m. EDT via Zoom
Registration for this webinar is free. To register, please visit our Eventbrite page: https://www.eventbrite.com/e/secondary-school-mathematics-looking-ahead-an-israeli-perspective-tickets-112118852596
Please also join us on Thursday, July 9, 11 am EDT for Part 1, featuring Paul Drijvers, Professor Mathematics Education, Freudenthal Institute, Utrecht University (The Netherlands) and on Thursday, July 23, 11 am EDT, for Part 3, featuring Salome Martínez, Director of the Laboratory of Mathematical Education, Universidad de Chile (Chile).

Join us
July 16 & 23

A school year from home: How Chile has taught math during the pandemic
Part 3 in the webinar series, “Moving Forward in the Midst of a Pandemic: International Lessons for Math Teachers”

Hosted by the U.S. National Commission on Mathematics Instruction – National Academies of Sciences, Engineering, and Medicine
A talk by Salome Martínez, Professor, Director of the Laboratory of Mathematical Education, Center for Mathematical Modeling, Universidad de Chile ( pictured below)

The COVID pandemic has been a great challenge for the Chilean school system. All primary and secondary schools closed just when the school year was starting. This situation has mobilized the Chilean Ministry of Education, school communities, and universities, to provide support and guidance for teachers, parents, and children. For instance, a prioritized curriculum was developed for 2020-2021, as well as new orientations for the teaching of math and other subject matters. In this talk, we will discuss some of these nationwide efforts and share mathematics teachers’ experiences with distance teaching. We will also present some principles and ideas to develop online mathematical tasks, drawn from our teacher professional program, that can be useful for mathematics teachers.

Thursday, July 23, 2020 from 11:00 a.m. to 12:00 p.m. EDT via Zoom
Registration for this webinar is free. To register, please visit our Eventbrite page: https://www.eventbrite.com/e/a-school-year-from-home-how-chile-has-taught-math-during-the-pandemic-tickets-112679663044
Please also join us on Thursday, July 9, 11 am EDT for Part 1, featuring Paul Drijvers, Professor in Mathematics Education, Freudenthal Institute, Utrecht University (The Netherlands) and Thursday, July 16, 11 am EDT for Part 2, featuring Tali Nischel, Head of the Mathematics Education Department, Levinsky College of Education (Israel).

For more information, contact:

For additional information about the webinar series and USNC MI search: USNC/MI or visit: https://www.nationalacademies.org/our-work/us-national-commission-on-mathematics-instruction-usnc-mi