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# ALM Mathematics in Prison (MiP)

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*Mathematics in Prison (MiP) topic group is a new initiative developed by Adults Learning Mathematics - International Research Forum (ALM). Our mission is to link practitioners and researchers interested in the field of Mathematics education in prisons and correctional education contexts. The topic group was developed in response to the ALM virtual seminar series, which featured a variety of speakers on various topics related to adults and Mathematics during 2021 and 2022. Discussions among participants at some events expressed interest in the field, and ALM responded by facilitating the development of a dedicated Mathematics in Prison group. Members joined from different parts of the world, all with an interest in Mathematics education in the secure estate. The group focuses on the challenges and opportunities of learning mathematics in this unique and under researched context.*

*Keywords: Adults mathematics education, teaching resources, correctional education, desistance.*

## Introduction

The MiP topic group first presented on the work of their work in a workshop at ALM 28, a virtual conference from the University of Hamburg. Members of the group presented an informal session where each taught a class on ratio, as this is a topic many of the group find is a challenge for their adult students. Participants were encouraged to share their perspectives and experiences in this field.

The two authors of this paper are practitioners in the field who are also researching for a PhD and wish to share their teaching experiences. Their research and to connect with practitioners. These goals were extended were shared within the topic group, to offers a forum to share good practice, discuss methodologies and explore the challenges practitioners and researchers face working in the secure estate. The group encourages informal conversations between practitioners and researchers to identify common themes and investigate ways that the MiP topic group might support mathematics education in this context in the future. Practitioners study experiences, literature, and best practices (Ginsburg 2019), and investigate topics such as teaching fractions, assessment and technology enhanced learning.

The focus of the paper is to open this topic for discussion and invite others from the field to connect with us, from any background, and together we can develop the vision activities of the group. We hope in future that we can identify some common themes emerging in the field of mathematics education in prisons. As the group has been in existence for a very short time, this paper reflects how we opened this discussion rather than describing findings. We would like in future to gather relevant literature and give practitioners the opportunity to reflect on the literature as it relates to their practice, possibly in the form of a professional book club.

## **The Prison Education Context**

In our meetings we found that Mathematics education in different countries varies in language, culture, curriculum, philosophy, delivery, and statutory basis. For example, there are different terms within the group's members for students, for staff, for the education service, and even for the subject of Mathematics itself. Our first task was to discuss the language of our work with the others in the group so we could communicate in a nonjudgmental way with each other.

There are many differences in the education services in prisons across the world, and this is reflected in the language used. Prisons over the centuries been seen as agents of the state to reform, to penalize, to encourage desistance from crime, and to encourage lifelong learning and personal transformation. In spite of this, in the MiP group, we felt that we share many similar experiences in our Maths classrooms.

We all work with students who may not have chosen to study Mathematics except that they found themselves in prison. This experience can encourage reflection and become a turning point in an individual's life, as mathematics is a gateway to further and higher education. Many have spent years away from formal education and may never have considered returning to education if they were not in this context. The process of capturing the stories and experiences of students learning Mathematics in informal contexts such as prisons, and workplace education settings (Kelly 2016), may help develop insights and understanding for future researchers, teachers, and teacher trainers.

### **Overview of the Mathematics in Prison Topic Group**

As stated, the MiP group grew out of the discussion prompted by the fourth virtual ALM seminar "Adults Mathematics in Prison Education". This was led by Linda Ahl who presented her research on the teaching of Adults mathematics in prison education". After the discussion, ALM trustees decided to advertise the first topic group meeting through the ALM mailing list. The first gathering included participants from Sweden, UK, Canada, USA, Ireland, Northern Ireland. While some could not attend, there was wide interest who wish to keep in touch with developments of the group. We have also had queries from Asia.

The MiP group has permeable boundaries with few barriers to relations with outsiders. We have been contacted by approximately twenty people who expressed interest in the group. Not all have attended all meetings but remain in touch with the group. Some of the members of the MiP group are currently teachers of mathematics in prisons, while others work in universities, and others are researchers. People who contacted the group are mostly mathematics teachers and many are teaching at different levels from basic to advanced. Generally, education in prison follows the national curriculum of the country at many different levels, but this is an area we have not investigated in detail as this group is still at an exploratory stage.

Communication was going to be a challenge for the group, due to the different time zones and the digital divide (Hopkins et al. 2015) between those working in prisons and those in the community. The impact of this was that the groups was not all able to access video calls in work hours, so the decision was made to rotate the times of the meetings, communicate outside our work settings, to

communicate online and send content to each other using technology platforms in advance of the meetings.

We reflected on the best way to communicate with those in the group before and during the meeting, and we decided to use Google Jamboard. This interactive smartboard enables teachers and students to collaborate on a virtual whiteboard, to allow to brainstorm ideas and create sketches (Virto et al 2020). We set up a link to Google Jamboard with questions composed by the group leaders ahead of the meeting. At the meeting, we invited participants to answer the questions and contribute to discussions suggested on the Jamboard.

**Table 1: Questions on MiP questionnaire**

<b>Question</b>	<b>Purpose</b>
What is your name?	To connect
What is your workplace?	To find out type of institutions, for example, secure or open.
Where s it located?	To find geographical context and possibly form local clusters.
What is your specific interest in Mathematics teaching?	To develop topic clusters.
What is your students' profile?	To see age and nationality profile
What are your students' goals?	To understand motivations.
What are your goals for the future of MiP?	To help plan.
What are your optimal times to meet?	To plan a calendar and rotate times for different time zones.
What dilemmas and challenges do you meet in your work?	To understand ethical and moral issues relevant to the work.
What words would you include in our community glossary?	Suggestion: include terms for students, staff, Mathematics.

We invited the group participants to answer on Jamboard on topics including their name, their workplace, their location, their student profile (general comments on age and nationalities), the goals of our students and their Mathematics learning objectives, the best times to meet, dilemmas and challenges we experience at work, our specific interests in mathematics teaching, our goals for the future of the MiP group, setting up a community glossary relating to our work. We are keen that the group remains open to future questions and observations from the existing members and future ones, so we plan to be flexible in organizing meetings. We are considering future formats and may look at other platforms, such as padlet.

The disadvantage of Jamboard is that anyone can remove and add material. As participants are working in prisons, there is awareness of the need for privacy and security. The decision was made to safeguard the group's discussion by sharing the link during the meeting so people could add ideas

and then we closed the link so no one else could change or share it. Finally, we shared a PDF of the meeting and brainstorming with the participants. A summary of the discussion was shared with the ALM trustees.

The content gathered indicated that educators were working with a wide range of age groups, in different departmental systems and with varied resources. The use of IT within the secure systems was diverse and this is one area that could be an important source sharing ideas and approaches to developing mathematics.

One of the challenges in teaching mathematics in this sector is how to be authentic and remain true to the needs of our students. Ahl (2020) comments that discussions on prisons can create curiosity in those who are not familiar with the field. As Szifris (2018) comments, this curiosity may be fed by the lack of educational research. Other professions have researched education in prison, from their own professional lenses, whether through the perspective of criminology and the impact on desistance, or from a psychological point of view. The MiP group are clear in our mission, which is to support and investigate Mathematics education in prisons, while respecting the dignity and privacy of staff and students.

### **Rationale and Statutory basis for teaching and researching mathematics in prisons**

Education has been a part of everyday life in prisons for centuries, yet it is still generally under theorized (Szifris 2018). While adult Mathematics is a more limited field of research than mathematics education in mainstream areas (Safford-Ramus et al 2016) yet have skills and knowledge and adult Mathematics education in prison is even more limited. Ahl (2020) has recently added to the field in a study based on mathematics education in Swedish prisons, and who argues for more research into this specialist field. Anecdotal evidence from practitioners in the MiP meetings and from research (Creese 2016) suggests that prisoners and people in detention have unmet needs in mathematics and numeracy.

Mathematics education in prison is a basic life skill (Council of Europe 1990). Yet it varies considerably across countries and within national systems. Levels of mathematics education have been investigated in prisons in the UK (Creese 2016) and the USA (Rampey et al 2016). In Ireland priority is given to those in prison with basic educational needs, including numeracy and literacy (Irish Prison Service 2019). In the UK, Coates (2016) advocates for development of basic skills in mathematics, as well as English, and Information and Communications Technology (ICT).

### **Future ideas for activities in the MiP Topic Group**

We look forward to presenting at CERME12 as it will help us to plan for our activities in the future, regarding the approach the group will take. We plan to gather more reflections on experiences from within mathematics classrooms in this context. This may include instructional strategies, teachers' professional development needs and experiences. We plan to collaborate on the instructional strategies and materials and their impact in classrooms that teachers share with us. Assessment in adult education is a core issue and mathematics assessment in prisons is an important concern as

mathematics is a gateway subject to further education. We plan to connect with other groups related to Mathematics and education in the secure estate and correctional settings.

We plan to keep the gatherings in our groups as open as possible, some sources for discussion in this group include an educator developing a curriculum or resources for a specific group of adult learners. Another option may be to pose a problem for the group on a specific problem or project the group could reflect on why the students struggle with this topic and offer strategies on how to deal with it. Another idea could be to reflect on the impact and relevance for the practitioner of an article or book, like a professional book club. This could lead to activities and experiments in-class in the future which may confirm or challenge our original findings.

Recently two members of the MiP group presented a workshop at the Australian Correctional Education Association conference, held online. This opened the topic to a new set of researchers, practitioners and policy makers. The topic provoked discussions and interest and we expect to have new members in the group in the future, and develop links with related Australasian groups.

## **Conclusion**

We anticipate that this topic group will provide a forum, within ALM, where Maths in prison practitioners and researchers can connect, share resources, and support each other in their work. The group is at an early stage, and we look forward to the developments in the future.

We hope that this paper and conference will help to publicize the topic group and add to the limited research in this field. The meetings have provoked lively discussion and have illustrated that the field of mathematics education in prisons has more features in common than it has differences.

We look forward to developing a dialogue on continuing professional development within this sector across national boundaries. This could take the form of pieces about practice, or it may include action research from individual practitioners' or teaching experiments. It may involve learners, their communities, and teachers, in line with all appropriate ethical guidelines. We do not yet have an overview of the different policies regarding curriculum and accreditation of Maths education in the prison context, so we hope to learn more about the role of governments in education policy on different countries.

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