HUMANISING MATHS:

Investigating the Impacts of colonialism on students from the Global South

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References: 1-d'Ambrosio, U. (1985), 2-Visnovska, J. et al(2025), 3-Quijano, A. (2007), 4-Schubring, G.(2021), 5- N/A , 6- University of Oxford Mathematical Institute (2023), 7- le Roux, K. et al(2021), 8-Edmonds-Wathen, C.(2019), 9-Gov.UK, (2023), 10- Royal Statistics Society(2025), 11-Bishop, A. J. (1990), 12-Huencho, A. et al(2023), 13-QAA (2023), 14-Hartley,D.(2016)

01 Introduction

The concept of universality in mathematics has meant that maths is usually interpreted as a subject isolated from variation; particularly the 'symbiotic[1]' relationship between colonialism and maths which is usually taken for granted when teaching at a university level.

Many critics suggest this to be the cause of a certain disregard for 'students' meaningful personal connections[2]' to mathematics.

Coloniality refers to the ongoing impacts of colonialism.

02 Objectives

This study aims to provide a method, which will be implemented, to collect the views of maths students from the Global South - as it is these students that feel this separation more strongly. This investigates:

- the extent to which coloniality impacts student ideas of/experiences with maths
- the idea of "universality" in maths
- recommendations for potential action the University of St Andrews can take based on the student feedback

03 Colonialism in Maths

Colonisation in maths has its roots in the 'European paradigm of rational knowledge[3]' which refers to how European knowledge was an 'aspiration' for people in the Global South as it was placed 'far out of reach of the dominated' before it then trickled down to them 'in a partial and selective way'.

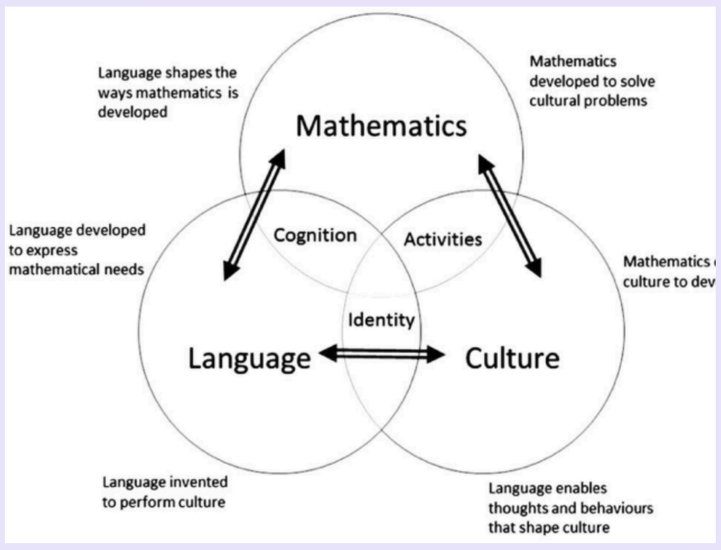
One way this was carried out through 'politically intended[4]' missionary school systems.

5 A missionary school in Sri Lanka, 1923

'Until recent decades, the study of the history of mathematics has tended to focus on the history of this European mathematics and on the works of the 'great' white European men.'[6]

Colonialism has also historically informed perception about who maths is from and who it is for. Which is shown by the discreditation of BAME mathematicians- an example being the Leibniz numbers - which were first derived by Indian mathematician Mādhava of Sangamagrāma roughly three centuries prior.

So, even if the same result can be derived by different knowledge systems- as it negates this colonial viewpoint that has been imperative in shaping this 'universal descriptive[7]'.



8 The Interdependence of maths and culture

The knock on effects of this this can be seen through the current attainment gap which sees:

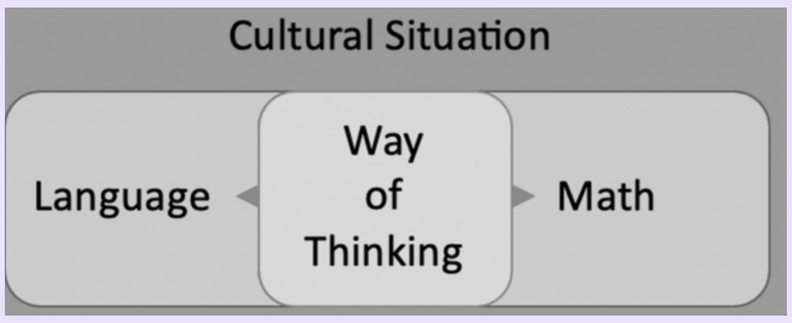
- 17.3% of BAME students receiving a first in their mathematics degrees- compared to the 36.1% of their white peers.[9]
- As well as BAME mathematical and engineering science researchers being 32% less likely to receive funding and, when awarded, to then receive 90p for every £1 their white peers make.[10]

While this is impacted by other factors it is not a result that can go ignored. The theory of decoloniality aims to question this disparity and better this disconnect.

Decolonial critics suggest that this decontextualization- at the heart of the Western "universal" is rendered 'meaningless' if your culture believes in interdependence.[11]

04 On Decolonialism

Decolonising mathematics involves questioning assumptions of objectivity, meritocracy, and universality and how this impacts minority students that must assimilate before they can meaningfully interact with mathematical content.



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There is resistance due to epistemic fragility and opportunity costs that come with integrating decolonialism within mathematics.

However, institutions, such as the QAA, have already started this introspection within the UK- calling for the decolonisation- and later contextualisation- of maths in their subject benchmark[13].

Approaches include decolonising the history and philosophy of mathematics, embedding cultural contexts, and adopting frameworks like ethnomathematics and critical mathematics education.

Ultimately, the process requires reflexivity and centring student voices, particularly from the Global South, to humanise mathematics and reshape higher education pedagogy.

A March 2016 protest at the University of Oxford calling for the removal of a Statue of Cecil Rhodes and for the decolonisation of Education.

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05 Method

This methodology follows from our findings in the literature review phase and is the intended process for an adjoining study.

- **Preliminary demographic information collection**- To ensure that participants are in line with the inclusion criteria of the study (over 18 years of age, with a link to the Global South, a student of a joint or full degree at the school of mathematics)
- **Interview Questions**- These will be split into three sections: background, reflections on universality of mathematics and personal experiences, and action and change.
- **Data Processing**- This is the qualitative analysis stage, where data is pseudonymised and analysed through software like Nvivo. They will be group into thematic codes which will inform future action.

06 Conclusion

This methodology will hopefully form a part of an important topic of discourse and help push the decolonisation of mathematics from theory into action.

With institutions like the QAA and Durham University's actions leading the way, it is imperative that the University of St Andrews and all higher education institutions in the UK, interrogate this notion and its effect on their mathematics students with the utmost care, to spark un-tokenised change

It is important that both university maths students and academics alike are aware of these concepts, as they can directly inform and humanise the way that other people can connect with mathematics.

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