

MEDIA RELEASE

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Mathematics education vital for engaged and informed citizenry

Societal disruptions such as climate change, Covid-19, and global warming demonstrate the importance of mathematics in enabling active and informed citizens, according to new Australian Catholic University research.

Professor Vince Geiger, who led a study examining the connections between citizenship education and mathematics education, and the implications of strengthening the link between the two, said mathematics was equally as important when it came to preparing the citizens of the future.

“Mathematics is an important part of any type of citizenship. It is increasingly important citizens understand what is happening locally and globally, and that they can interrogate claims made in the media by using an evaluative framework to think critically,” Professor Geiger said.

“Authentic school mathematics teaching and learning addresses these important capabilities.”

Professor Geiger said mathematical concepts and skills including statistics, probability, risk, area, volume, and location were vital to help students evaluate claims about disruptions such as global warming.

“We need to reimagine the concept of citizenship and rethink curriculum goals along with creating greater connections between mathematics, science, economics, and studies of society,” he said.

“Citizenship is often just tucked away as a small study in Year 10. It should be present in every subject and not compartmentalised – an engaged and informed citizenry depends on it.”

The research analysed three interconnected layers of influence on the practice of teaching and learning in citizenship education and mathematics education: 1) perspectives from citizenship education and mathematics education, 2) institutional factors, and 3) emerging influences.

Professor Geiger, a professor of mathematics education at ACU’s Institute for Learning Sciences and Teacher Education, said the first layer of influence included research that had implications for teacher education, thus impacting directly on school students.

The second layer related to how institutional factors such as policy and curricula were implemented in the classroom, while the third layer incorporated emerging influences which created new mathematical demands for citizens and greater attention on the critical aspects of citizenship itself.

Professor Geiger said the exploration of the connections between citizenship and mathematics education revealed serious implications for educators, policymakers, and researchers.

“Decisions by governments, expert and non-expert commentary, and media messaging relating to global disruptions, societal changes, and systemic structures are increasingly being delivered using sophisticated mathematics,” he said.

“It is essential citizens can comprehend and critique such claims, decisions, and predictions.”

Professor Geiger said educational policy makers needed to pay more attention to the essential capabilities students needed to accommodate complex mathematical, statistical, and digital demands.

“It is this educational policy perspective which shapes what is taught by school systems and required in other educational institutions,” he said. “Similarly, we need to be mindful of emerging influences and examine how mathematics can be used to reinforce or challenge inequity and injustices.”

Click [here](#) for a link to the study.

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