

# VASILIKI PITISIA

*An interview with Amina Akif*



## **Investigating high achievement in mathematics and science in Ireland**

In this interview, Dr. Vasiliki Pitsia, the winner of the AEA-Europe Kathleen Tattersall Young Researcher Award for 2023, provides a comprehensive overview of her research on high achievement in Irish education, particularly in maths and science. Her work aims to inform educational policy and practice in Ireland and has contributed to a new literacy and numeracy strategy in the country.

Originally from Greece, Dr. Pitsia is currently based in Ireland as a research associate at the Educational Research Centre (ERC) where she contributes to the national TIMSS and PIRLS teams and serves as an Associate Editor for the Irish Journal of Education. She has also worked as a researcher, data analyst, and psychometrician on various projects in Ireland and Greece and as a consultant at the World Bank Group, and has given lectures on research methodology, measurement, assessment, and statistics to postgraduate students and staff in academic institutions across Europe.

Dr. Pitsia's interest in educational assessment dates back to her undergraduate days in Greece, where she completed a Bachelor of Education in primary teaching. Later opting for a career in research, she pursued a Master of Science in Quantitative Methods and Statistical Analysis in Education. Her Ph.D. research, funded by the Irish Research Council, was conducted at Dublin City University's Centre for Assessment Research, Policy and Practice in Education (CARPE).

The research aims to address a significant gap in Irish educational policy: while the country performs well overall in international assessments, it has a lower-than-expected proportion of high achievers, particularly in maths and science. Dr. Pitsia's work seeks to provide in-depth, longitudinal insights into this issue to inform future educational strategies.

During her studies, she became interested and motivated to focus on educational assessment data to inform policy and practice. This stemmed from her concern that given the wealth of research and data collection, the subsequent impact on policy and practice is often minimal. To address this, her project consists of an in-depth analysis of all data from international and national assessments that have taken place in Ireland from 2000 to 2018, at both primary and post primary levels. Irish state examination data are also analysed to provide a more holistic view of high achievers in maths and science as compared to other subjects, as well as to see why high achievement in these two subjects suffers compared to other areas in the Irish education system. In particular, Dr. Pitsia wanted to understand why Ireland, despite its overall strong performance in international assessments, has a lower-than-expected proportion of high achievers, particularly in maths and science. In addition, her aim was to identify the characteristics of these high achievers and inform policy-making to improve high achievement rates in these subjects.

Dr. Pitsia reports being struck by the consistency of the data across different studies and educational levels, revealing that Ireland steadily had fewer high achievers in maths and science compared to countries with similar average performances. Reading, however, did not present the same issue, which Dr. Pitsia interprets within the context of Ireland's emphasis on reading, the Irish literature and music.

She also delves into the significant role that families play in high achievement. Her research found that specific student characteristics, particularly in the non-cognitive area like attitudes and self-beliefs, were consistently associated with high achievement. Family factors, such as parental involvement in children's learning and certain leisure activities, also stood out as significant. Dr. Pitsia suggests that there is a need for greater collaboration between schools and parents, starting from the early years of education. She recommends that preschool practitioners and teachers be trained on how to work effectively in partnership with parents, emphasizing their crucial role in their children's learning. Dr. Pitsia believes that these findings are not specific to Ireland; the role of the family is likely a significant factor in student achievement universally. While providing detailed instructions on how educational systems could work with parents was beyond the scope of her study, she notes that there has already been a move towards greater parental involvement in education in recent decades, both in Ireland and globally, which she further encourages.

Discussing the international relevance of her research findings, she believes that her findings on predictors of high achievement could be relevant for countries with similar educational systems and cultures. Her award will offer her an excellent platform to disseminate her research among international experts in educational assessment, despite the stress of delivering a keynote speech.

As to the challenges of using assessment data responsibly, Dr. Pitsia emphasizes the need for caution when interpreting and presenting findings, especially given the criticisms surrounding the use of large-scale assessment data. She acknowledges that these challenges are part of a broader set of issues that researchers face, such as anxiety and self-doubt, but notes that supportive supervisors can make a significant difference.

Given the importance of impactful research, she encourages early-career researchers to apply for the Kathleen Tattersall Award, as it provides an opportunity to share their work with a broader audience, potentially inspiring others to address similar questions in different contexts. To budding researchers in the field of educational assessment, she emphasizes the importance of staying up-to-date with technological advancements and thinking critically about traditional assessment methods. She also highlights the challenges and opportunities presented by the rise of AI in educational assessment, among other disciplines.

Dr. Pitsia intends to continue working in the field of educational assessment. She plans to conduct a follow-up study on high achievement in mathematics and science in Ireland, especially considering the new literacy and numeracy strategy that will be implemented in Ireland. Her research has contributed to this strategy, and she hopes to gauge its impact in the coming years. Dr. Pitsia also expresses her commitment to advocating for data-based decision-making in education, not just in Ireland and Greece, but also in developing countries. She believes that data should inform educational policies and practices, rather than decisions being made arbitrarily or based on political agendas.

In her keynote speech at the AEA-Europe conference in Malta, Dr. Pitsia wishes to make the point that while much research has focused on low-achieving students, high-achieving students are often overlooked. Her keynote will delve into the characteristics of high-achieving students in Ireland, aiming to shed light on this under-researched group.