



Report for the Period October 2020 – September 2021

Contents

Director's Overview	3
The Centre.....	6
Governance.....	6
Staff	7
Doctoral Students	9
Former Doctoral Students	11
Adjunct Professors	12
Research Associates (alphabetical order).....	13
International Research Advisors	23
Linked Centres	25
Research.....	26
Ongoing Research.....	26
Research Completed Since October 2020	34
Research Outputs October 2020 – September 2021.....	38
Peer-Reviewed Articles.....	38
Reports	39
Commissioned Reports.....	39
Industry Reports	39
Accepted, Peer-Reviewed Conference Papers	40
Other Outputs by Members of CARPE.....	41
Papers in press or currently under review	42
Papers in preparation	43
CARPE Events	44
Research Conversations Series 'Classroom Assessment Literacy'	44
Prometric Lunch and Learn Presentation Series	45
Quality and Qualifications Ireland Seminar Series	46
Boston College 'Brown Bag' Event.....	46
Announcement of New Prometric Funding.....	47
CARPE in the Media	48
CARPE Contributions to the IoE	51
CARPE External Engagement	52
CARPE Staff Professional Development.....	53
Appendix 1	54

Director's Overview



They say it takes a village to raise a child; well it's also true that it takes the equivalent of a village to grow a research centre. CARPE is now six years old and the fact that it is thriving is due in no small measure to the commitment and support of so many people. The contributions of over fifty individuals are listed in this report. Some are more involved in the day-to-day work of CARPE than others, but all have played a role in getting the centre to the point where it is now considered as a "go-to" place in Ireland for assessment knowledge and expertise. That was an important part of the vision set out for CARPE back in 2016. Needless to say, Prometric's funding has been a vital part of the journey so far and the fact that CEO, Roy Simrell announced recently that the company were extending the funding period to the end of 2023 is very good news indeed. Prometric VPs, Linda Waters and Garrett Sherry, as well as DCU President, Daire Keogh, IOE Executive Dean, Anne Looney and DCU Educational Trust Director of Philanthropy, Claire Whelehan were great advocates for the centre during the decision-making process. Advertisements for a post-doctoral researcher and PhD candidate related to the new funding were posted on the DCU website and on international bulletin boards in September.

Looking back over the past twelve months the research conducted on Live Remote Proctoring for Prometric and on the Leaving Certificate Calculated Grades were highlights for me. Both were not only highly relevant given the pandemic circumstances, but manifestations of how CARPE could be agile in responding in a timely manner to the needs of its major funder and the educational system more generally. In addition to these projects, twelve others are currently in train, while six have been completed since October 2020. During the course of a very productive year, CARPE personnel have had ten peer reviewed papers published and twelve peer-reviewed papers accepted for presentation at industry/academic conferences. A further eleven papers are either in press, under review or in preparation. Staff/adjunct staff have also contributed to five substantial research reports and created eight podcasts/blogs. The fact that CARPE research featured on the websites of such organisations as the European Educational Research Association (EERA) and the American Educational Research Association (AERA) was particularly significant. In Ireland, CARPE's public profile has been greatly

enhanced through op-eds and interviews carried in national newspapers and on other media throughout the year. In addition, members of the CARPE team led a number of external assessment-related events that included the Prometric Lunch and Learn Series, the Boston College Brown Bag Series and Quality and Qualifications Ireland Seminar Series. All were very well attended.

CARPE staff have also been busy with their own professional development activities. Prometric post-doctoral researcher, Gemma Cherry successfully defended her dissertation in the Spring, while Prometric PhD candidate, Conor Scully made the successful transition from doctoral track to doctoral register at DCU last June. Conor's research is focused on the use of Objective Structures Clinical Examinations (OSCE) in nursing education. IRC Scholar, Paula Lehane submitted her PhD dissertation on computer-based testing for examination in August and was appointed as an Assistant Professor at the Institute of Education in September. All have engaged in multiple professional developments events at DCU and elsewhere.

I am delighted to note that a new post-doctoral researcher, Eadaoin Slattery, began work at CARPE on September 20th. Eadaoin will contribute to various assessment in education research projects at CARPE but her main work will be focused on a new research study designed to investigate how the digital game, *Minecraft: Education Edition* can be used to assess creativity and collaborative problem solving in primary schools. The initiative is being wholly funded by a grant from Microsoft Ireland. Deirdre Butler from the School of STEM Education, Innovation and Global Studies at DCU and Kevin Marshall, Head of Education at Microsoft Ireland will play key roles in collaborating with me to manage the project.

I continue to be grateful for the on-going support of Marguerite Clarke, John Gardner, Zita Lysaght, Larry Ludlow, Garrett Sherry, Gerry Shiel and Matthias von Davier of the CARPE Advisory Board. I especially want to thank Linda Waters, Li-Ann Kuan at Prometric and my School of Policy and Practice colleague, Zita Lysaght for all the work they do as part of the Carpe Advisory Panel. My regular meetings with them help enormously in keeping the CARPE research agenda on track. As an educational assessment specialist, Zita's direct involvement in multiple CARPE research projects and in supervising CARPE PhDs has been invaluable.

Finally, my sincere thanks to Gemma for her painstaking work in helping me to prepare this report and for maintaining the CARPE website and Twitter account throughout the year.

A handwritten signature in dark ink, reading "Michael O'Leary". The signature is written in a cursive style with a long, sweeping underline that extends to the right.

Michael O'Leary, Prometric Chair in Assessment/Director of CARPE

The Centre

Governance

As a research centre within the Institute of Education, CARPE is managed by the Research Centres and Groups Committee (an Education Faculty Committee) comprising the Chairs/Directors of Research Centres chaired by rotation. The Associate Dean for Research is an ex officio member of the committee, and the committee chair represents all DUC's Research Centres on the Faculty Research Committee. In addition, CARPE has an Advisory Board which meets annually. The function of the Board is to:

- Provide ongoing advice to the Director on academic/research aspects of the Centre.
- Assist in the development of strong collaborative links (national and international) with other assessment organisations and research centres.
- Help to maintain the Centre's visibility and reputation in research.
- Review the Centre's annual report and provide feedback of a strategic nature.
- Attest to the quality of the research outputs from the Centre.
- Evaluate the Centre's operational functioning and processes.

Membership of the Board (comprising five external representatives from academia, a representative from Prometric and a representative from the Institute of Education) is by invitation of the Director and is for three years. Current members of the Board are:

- Dr. Marguerite Clarke, World Bank, Washington
- Professor John Gardner, University of Stirling
- Professor Larry Ludlow, Boston College
- Dr. Zita Lysaght, Dublin City University
- Mr. Garrett Sherry, Prometric
- Professor Gerry Shiel, Educational Research Centre
- Professor Matthias von Davier, Boston College

The Board meets once a year. All proceedings and decisions are minuted and circulated for comment to the Board members and to those in attendance. The draft minutes are circulated prior to the subsequent meeting and are approved and signed at that meeting.

A standing committee of the advisory board, the CARPE Advisory Panel (CAP), meet three to four times a year using online or face-to-face sessions to review and plan individual projects related to Prometric's needs and interests. The members of CAP are:

- Professor Michael O'Leary
- Dr. Zita Lysaght
- Dr. Linda Waters (Prometric)
- Dr. Li-Ann Kuan (Prometric)

Staff



Professor Michael O'Leary

Prometric Chair in Assessment

Michael holds the Prometric Chair in Assessment and is the Director of CARPE. He is a graduate of the B.Ed. Programme at St Patrick's College and holds an M.Ed. from Trinity College, Dublin. He gained his Ph.D. in Educational Research and Measurement at Boston College in 1999. He has acted as Ireland's representative on the OECD's Network A (student outcomes) and sat on the Board of Participating Countries of PISA during its first cycle. He was a member of the NCCA working group that developed the guidelines on assessment for Irish primary schools. He was also a member of the Child Development and Education Panel of the National Longitudinal Study of Children in Ireland during its planning phase. Michael has provided statistical analysis of data for the national surveys of reading and mathematics achievement in Ireland and collaborated over many years with colleagues on a variety of research projects ranging from the introduction of calculators at Junior Cycle to teaching for social justice. Between 2007 and 2015 he was Director of Postgraduate studies in education at St Patrick's College. He now leads an extensive programme of research at CARPE focused on assessment and measurement at all levels of the educational system and in the workplace. He also contributes to teaching of modules in assessment and quantitative research methods, as well as the examining and supervision of doctoral students.



Dr. Gemma Cherry

Prometric Post-Doctoral Researcher

Gemma is the Prometric Post-Doctoral Researcher at CARPE. Gemma holds a B.A. in Sociology, an MRes in Social Research Methods and a Ph.D. in Education from Queen's University, Belfast. She is also an Associate Fellow with the Higher Education Academy. Prior to joining CARPE, Gemma worked full-time as an affiliated lecturer at the University of Cambridge, specialising in quantitative research methods. At Cambridge, Gemma also coordinated the Masters in Educational Research programme and supervised the research projects of postgraduate students in the Faculty of Education. At the University of Cambridge, Gemma was involved in research that assessed the economic value of literacy and numeracy skills across OECD countries. Previously, Gemma held various positions in the School of Social Sciences, Education and Social Work at Queen's University. Her work included undergraduate and postgraduate teaching, focusing on research methods. At Queen's University, Gemma's research focused on the intersectional nature of educational inequalities and her PhD examined disparities in primary and post-primary pupils' attainment outcomes across urban and rural locations of Northern Ireland. Gemma contributes to the full programme of research at CARPE.



Éadaoin Slattery

Post-Doctoral Researcher in Game-Based Learning and Assessment

Éadaoin has recently joined CARPE as a post-doctoral researcher. Her post-doctoral research focuses on game-based learning and assessment using Minecraft: Education Edition as well as research on educational assessment more broadly. Éadaoin holds a B.Sc. in Psychology and M.Sc. in Psychological Science from the University of Limerick. She is interested in the measurement and enhancement of cognition and behaviour, with a particular emphasis on attention and memory. Her PhD research (also completed at the University of Limerick), which was funded by the Irish Research Council, focused on the development and evaluation of a school-based attention training programme designed to improve concentration in primary school children. Éadaoin is a member of the Berkeley Initiative for Transparency in the Social Sciences (BITSS) Catalyst network, which aims to advance the practice and teaching of transparent and reproducible research in the social sciences. She has held various teaching positions at the University of Limerick and Mary Immaculate College in psychology and research methods.

Doctoral Students



Conor Scully is the current Prometric PhD candidate at CARPE (2019 – 2021). He holds a B.A. in Philosophy, Political Science, Economics and Sociology from Trinity College Dublin and an MSc in Sociology from the University of Amsterdam. His Master's thesis research was on the presentation of heterosexuality in Irish secondary school aged boys. His research interests include emotional intelligence, gender, sexuality, education and their intersection.

PhD Working Title: Inter-Rater reliability in Objective Structured Clinical Examinations for Nurses.

Supervisors: Dr. Mary Kelly, Dr. Zita Lysaght and Professor Michael O'Leary

Progress: 3rd Year



Paula Lehane was previously the 2018 Prometric PhD candidate at CARPE. Her research is currently being funded by the Irish Research Council (2019 – 2021). She graduated from Mary Immaculate College (University of Limerick) with a first-class honours degree in Education and Psychology in 2011. She completed her Postgraduate Diploma in Special Educational Needs (SEN) at University College Dublin (UCD) in 2015 and then completed a part-time Master's in Education there in 2016. She was previously the SEN and IT Co-Ordinator of a large urban primary school and has taught all class levels within the primary sector. Alongside her studies and work as a teacher, Paula has been employed as a research supervisor and guest lecturer in UCD, delivering inputs on topics including collaborative instruction, response to intervention and the use of statistics and digital tools in schools. Her research interests include SEN, school-based assessment practices and technology-based assessments. In August 2021, Paula submitted her PhD Thesis and her Viva is due to take place in October 2021. Since submitting her PhD, Paula has been working as an Assistant Professor in Inclusive and Special Education in the Institute of Education, DCU.

PhD Working Title: The impact of test items incorporating multimedia stimuli on the performance and attentional behaviours of test-takers.

Supervisors: Professor Michael O'Leary, Dr. Darina Scully and Professor Mark Brown

Progress: Submitted (August 2021)



Sylvia Denner is a part-time PhD candidate at CARPE. She holds an M.Soc.Sc. from University College Dublin and a Higher Diploma in statistics from Trinity College Dublin. Sylvia works in the Educational Research Centre, where she is currently working on PISA 2018. She was also one of the authors on the PISA 2015 report.

PhD Working Title: What is the impact on student performance in reading, mathematics, and science in PISA when students in age-based samples are tested at different times of the year (i.e., autumn vs. spring testing), and what variables can explain the impact?

Supervisors: Prof. Michael O’Leary and Prof. Gerry Shiel

Progress: 4th year.



Deirdre Dennehy is a part-time PhD student at CARPE. She holds a Bachelor of Education in Education and Psychology and a Masters of Education from Mary Immaculate College (University of Limerick). Her research interests include the assessment of well-being, standardised testing and the use of digital assessment tools. Deirdre works as a primary school teacher and has taught a range of classes across the primary sector.

PhD Working Title: Embedding the Assessment of Emotional Intelligence within Collaborative Problem Solving Tasks: An Exploratory Study

Supervisors: Dr Zita Lysaght and Professor Michael O’Leary.

Progress: 3rd Year.

Former Doctoral Students



Vasiliki Pitsia was a PhD candidate working in collaboration with CARPE and the IoE for the period 2017-2020 (Vasiliki successfully defended her thesis in September 2020). Her research was funded by the Irish Research Council under the Government of Ireland Postgraduate Programme. Vasiliki holds a Bachelor of Education (BEd) from the University of Ioannina, Greece and an MSc in Quantitative Methods and Statistical Analysis in Education from Queen's University Belfast, UK. Her broader research interests include research methods, statistical analysis, and educational assessment, with a focus on large-scale international and national studies. Vasiliki has published her research in peer-reviewed academic journals and has presented at various national and international conferences.

PhD: Investigating High Achievement in Mathematics and Science in Ireland: An In-Depth Analysis of National and International Assessment Data

Supervisors: Prof. Michael O'Leary, Dr. Gerry Shiel and Dr. Zita Lysaght

Progress: Completed (December 2020).



Anastasios Karakolidis was the first Prometric PhD candidate at CARPE (2016 – 2019). He holds a B.A. in Primary Education Teaching from the University of Ioannina, Greece, and an M.Sc. in Quantitative Methods and Statistical Analysis in Education from Queen's University, Belfast. He was a member of the research team responsible for the Programme for International Student Assessment (PISA) 2015 report for Greece. Anastasios delivers lectures on research methodology and advanced statistical techniques (e.g. multilevel modelling) to Master's students in Greece and Ireland. His research interests include research methodology, statistical analysis, measurement, assessment, testing and large-scale international studies. Anastasios successfully defended his doctoral thesis in July 2019, passing with minor revisions.

PhD: Animated Videos in Assessment: A Comparison Study of Validity Evidence from and Test-takers' reactions to an Animated and Text-Based Version of a Situational Judgement Test

Supervisors: Prof. Michael O'Leary and Dr. Darina Scully

Completed: July 2019.

Adjunct Professors



Prof. John Gardner, University of Stirling

John Gardner is a professor of Education at the University of Stirling and is the former Senior Deputy Vice-Chancellor of the university. In 2012 he completed a four-year term as President and Vice-President of the British Educational Research Association. He has been a visiting professor at the University of Oxford, Department of Education (2009/17) and is currently a visiting professor at Queen's University Belfast and Dublin City University. He was elected to fellowship of the UK Academy of Social Sciences in 2007, the British Computer Society in 2004 and the Chartered Institute of Educational Assessors in 2007. Since 2018, he has been Chair of the Welsh Government's Teacher Recruitment and Retention Advisory Board.



Prof. Gerry Shiel, Educational Research Centre

Professor Shiel is a Research Fellow at the Educational Research Centre, St Patrick's Campus. He has overall responsibility for the centre's standardised test development programme in reading, mathematics, and science for primary and secondary schools. Over the past 25 years, Gerry has developed high level expertise in the teaching and assessment of reading literacy and has been centrally involved in multiple cycles of large-scale testing programmes including the national assessments of English reading and mathematics and the TIMSS, PISA and PIRLS international studies. He has extensive experience of test development and item writing, scoring of student responses, scaling and analysis of data, report writing and communicating findings across a range of media. He has worked at the highest level of decision making on the OECD's testing programme having been a member of its PISA Board of Participating Countries for many years. Gerry has had a multitude of peer reviewed articles and reports published and has presented on his research all over the world. Most recently, alongside Associate Professor Damian Murchan (Trinity College), he published an important textbook on assessment for pre-service and practicing teachers internationally. *Understanding and Applying Assessment in Education* (2017) is the first textbook of its kind with Irish authors.

Research Associates (alphabetical order)

The CARPE Team collaborate with a number of individuals from other centres within the IoE, other faculties within DCU, and indeed other institutions globally on various projects. Bios of these Research Associates are provided below. Further details of the projects in which each person is involved are provided in the section on 'Ongoing Projects' (see p.26 – 33).



Prof. Lisa Abrams, Virginia Commonwealth University

Lisa is an Associate Professor of Research and Evaluation in the School of Education at Virginia Commonwealth University (VCU), where she teaches graduate courses in assessment, measurement, programme evaluation and educational research design. She is a graduate from Boston College, with a doctoral degree in Educational Research, Measurement and Evaluation. She specialises in test-based accountability policy, assessment design and data-use practice. Lisa spent three months of her sabbatical as a Visiting Professor at CARPE from May to July 2018, during which time she worked on a number of projects in the areas of test development and assessment literacy and professional development. Lisa continues to collaborate with the Centre and returned in autumn of 2018 to co-deliver the Annual CARPE Lecture.



Dr. Sarahjane Belton (ACT@DCU Project)

Sarahjane graduated with a degree in Physical Education and Maths from the University of Limerick in 2001. She taught physical education for a year in second level education before completing a PhD in Physical Activity Measurement at the University of Limerick in 2006. Sarahjane lectured in Physical Education in ST. Patrick's College from 2006-2007 and has lectured in Physical Education in the School of Health and Human Performance at DCU from 2007 to present. Sarahjane conducts research in the field of childhood physical activity and health and much of her work centres on developing and evaluating physical literacy intervention programmes.



Prof. Mark Brown (Critical Review of Learning Portfolios)

Mark is Ireland's first Chair in Digital Learning and Director of the National Institute for Digital Learning (NIDL). Mark is a member of the Executive Committee of European Distance and e-learning Network (EDEN) and previously chaired (2014 – 2018) the Innovation in Teaching and Learning Steering Committee for the European Consortium of Innovative Universities (ECIU). He also

serves on the Supervisory Board of the European Association of Distance Teaching Universities (EADTU) and co-leads the Empower Online Learning Leadership Academy (EOLLA) for new and emerging institutional leaders in European universities. Mark was previously (2016 – 2018) a representative of the Irish Universities Association on the Board of the National Forum for the Enhancement of Teaching and Learning in Higher Education.



Prof. Deirdre Butler (Assessment of Transversal Skills in STEM; Minecraft in Irish Schools)

Deirdre works in DCU's Institute of Education and is internationally known as a leading scholar and creative practitioner of methods supporting teachers' professional development and students' learning. She has a particular expertise in developing sustainable, scalable models of teacher professional learning and has managed projects and school-based initiatives which focus on creative uses of digital technologies. She advises ministries of education around the globe on redesigning education systems for the challenges that face the world now and in the future. She has worked across a broad range of stakeholders in education, technology, government, corporate and non-profit sectors. She played a key role in developing the Digital Strategy for Schools (2015) and the 21CLD MOOC, the first Irish-designed MOOC for teacher professional learning. She also established the flagship Lego Education Innovation Studio with DCU's Institute of Education along with a purpose-built Minecraft Studio.



Dr. Michelle Chen (Remote Proctoring)

Michelle is the Validation Studies Research Lead at Paragon Testing Enterprises, University of British Columbia Vancouver, Canada. Her research focuses on test psychometric properties. Michelle collaborates with CARPE on research pertaining to remote proctoring modes of test administration.



Dr. Eamon Costello (ATS-STEM)

Eamon is currently chair of DCU's online BSc. in Information Technology and BSc. in Management of Information Technology and Information Systems. Eamon holds a BA (Hons) in English Literature and History from Trinity College Dublin, a higher Diploma in Computer Science from University College Dublin, an MSc in Software and Information Systems from National University of Ireland Galway and a doctorate in Education from Trinity College Dublin. His doctoral research analysed the implications of massively distributed collaborative

development processes for education and educational technology and focused on the community of the Open Source VLE Moodle.



Dr. Gulsah Gurkan (Assessment of Well-Being)

Gulsah has a PhD from the Department of Measurement, Evaluation, Statistics and Assessment (MESA) at the Lynch School of Education, Boston College. She also holds a B.S. and an M.S. degree in Teaching Physics from Bogazici University, Istanbul. Prior to beginning her doctoral studies, Gulsah worked as a measurement and evaluation specialist at the educational Volunteers Foundation of Turkey for three years, where she led many research and evaluation studies to foster the development of evidence-based programs implemented across the country. Her current research interest mainly focus on psychometrics, item response theory, large-scale data analysis, quasi-experimental research and educational policy.



Dr. Anastasios Karakolidis (Various Projects)

Anastasios was the first Prometric PhD candidate at CARPE (2016-2019). He is currently a Research Assistant at the Educational Research Centre and works mainly on the National Assessments. He holds a B.A. in Primary Education Teaching from the University of Ioannina, Greece and an M.Sc. in Quantitative Methods and Statistical Analysis in Education from Queen's University, Belfast. He was a member of the research team responsible for the Programme for International Student Assessment (PISA) 2015 report for Greece. Anastasios delivers lectures on research methodology and advanced statistical techniques (e.g., multilevel modelling) to Masters students in Greece and Ireland. His research interests include research methodology, statistical analysis, measurement, assessment, testing and large-scale studies.



Dr. Li-Ann Kuan (Various Projects)

Li-Ann is an educational psychologist with over 20 years of experience in the testing industry, engaging both in content development and psychometrics. Over the course of her career, Dr. Kuan has managed the development and delivery of large-scale educational and professional assessments both in the United States and in developing countries such as Pakistan, Namibia and Zambia. Dr. Kuan received her Bachelor of Science in Psychology from Brown University, and a Master of Arts and a Doctor of Philosophy in Psychological Studies in Education from the University of California, Los Angeles. Currently, Li-Ann is Vice President of Assessment Services at Prometric where she leads a team of exam content development and psychometric experts responsible for creating reliable measures and valid interpretations of individual ability.



Prof. Anne Looney (Cross-National Achievement Surveys and Educational Monitoring in Ireland)

Anne is the Executive Dean of Dublin City University's Institute of Education, Ireland's largest faculty of education. From 2001 to 2016, she was the CEO of the National Council for Curriculum and Assessment, the agency responsible for curriculum and assessment for early years, primary and post-primary education in Ireland. She also held the position of Interim CEO at the Higher Education Authority until March 2017. A former teacher, she completed her doctoral studies at the Institute of Education, University College London. In 2014/15 she was a professional research fellow at the Institute for Learning Sciences and Teacher Education, based at Australian Catholic University in Brisbane. Her current research interests include assessment policy and practice, curriculum, teacher identity and professional standards for teachers and teaching. She has also published on religious, moral and civic education, and education policy. She has conducted reviews for the OECD on school quality and assessment systems and is the current President of IPDA - the International Professional Development Association. At CARPE, Professor Looney contributes to a project entitled "Cross-National Achievement Surveys and Educational Monitoring in Ireland".



Dr. Francesca Lorenzi (Assessment for Learning Audit Instrument Project)

Francesca is an undergraduate and postgraduate lecturer at DCU. Her teaching is primarily in the areas of Intercultural Education, Ethics and Values in Education, Philosophy of Education and Curriculum Implementation, Assessment and Feedback. She obtained a PhD in Education from the National University of Ireland, Maynooth with a thesis focusing on the role of dialogue in assessment and the democratisation of practices in education. Her specific research interests include education, democratic and inclusive approaches to educational assessment, creativity in education, ethics in the classroom, values and identity in relation to education for sustainable development.



Prof. Larry Ludlow (AFL Project)

Larry chairs the Department of Measurement, Evaluation, Statistics and Assessment (MESA) at the Lynch School of Education, Boston College. His expertise and research interests include Rasch model applications, psychometrics, applied statistics, student ratings of instruction and teacher attrition models. During his career, Larry has rigorously and internationally advanced how learning is assessed and how we improve teaching. Larry

received the Association for Assessment and Research in Counselling/Measurement and Evaluation in Counselling and Development Patricia B. Elmore Award for outstanding research in Measurement and Evaluation. Larry is also a Fellow with the American Educational Research Association.



Dr. Zita Lysaght (Various Projects)

Zita Lysaght (Bed, Med, MSc, EdD) is a member of the School of Policy and Practice at the Institute of Education, DCU, where she coordinates and teaches classroom assessment and research methodology modules on undergraduate, masters and doctoral programmes. As a Research Associate with the Centre for Assessment Research, Policy and Practice in Education (CARPE) at DCU, she directs a range of research projects, supervises doctoral work and serves on both the Centre's Advisory Board and Advisory Panel.



Dr. Kevin Marshall

Kevin is a graduate of the Educational Research, Measurement and Evaluation (ERME) programme at Boston College. He is Head of Education at Microsoft Ireland. In this role, Dr. Marshall has led highly practical efforts to improve and share best practices and methodologies in how digital technology can be used to support teaching and learning. He is responsible for Microsoft Ireland's innovative Dream Space Project – a dedicated innovation and education hub at its Dublin campus headquarters designed for visiting primary and Transition Year students. During the COVID-19 pandemic the Dream Space Home Space portal gave students the opportunity to engage in STEM experiences from their homes. In September 2020, under Kevin's leadership, Dream Spare TV was born, and its success has led to the creation of a new series of digital technology focused educational programmes broadcast in collaboration with RTÉ jr's Home School Hub.



Dr. Kay Maunsell (Assessment of Well-Being)

Kay is an Associate Professor of Psychology and Human Development in the School of Human Development, DCU Institute of Education. Kay lectures primarily in the area of developmental and educational psychology and is the Subject Co-ordinator of Developmental and Educational Psychology on the BSc programme offered through the School of Psychology at DCU. Kay also supervises students' research from undergraduate

through to doctoral levels. She maintains an active research profile in the fields of developmental psychology, education, social justice, and human rights. She has been engaged as Irish Co-ordinator on a range of large-scale EU research projects in the broad areas of education, lifelong learning and social justice.



Dr. Angela Mazzone (Assessment of Workplace Bullying)

Angela is a Postdoctoral Researcher at the National Anti-Bullying Research and Resource Centre (ABC), DCU. She is involved in a large-scale national study on workplace bullying which is funded by the Health Service Executive (HSE). Angela has also collaborated on several international research projects focused on bullying in early adolescence. She serves as a Managing editor for the International Journal of Bullying Prevention and Chairs the Observatory on Cyberbullying, Cyberhate and Online Harassment, based in the ABC. Her main research interests include workplace bullying, school bullying, bullying towards immigrant youth, peer relations and socio-moral development.



Dr. John McKenna (ACT@DCU Project)

John has been a Lecturer in the School of Computing at DCU since September 2000. He graduated with a degree of B.Eng. in Electronic Engineering in 1988 from NIHE, Limerick (now University of Limerick). He obtained the degrees of M.Sc. in Speech and Language Processing and a PhD from the University of Edinburgh in 1996 and 2004 respectively. More recently (2012) he received a Postgraduate Diploma in Technology and Learning from Trinity College, Dublin. Prior to lecturing, he worked as a design engineer in electronics and telecommunications in the London area and as a communications consultant in Seoul, Korea.



Dr. Eilish McLoughlin (Assessment of Transversal skills in STEM)

Eilish is the Director of the Centre for the Advancement of Science and Mathematics Teaching and Learning (CASTeL) and an academic member of the School of Physical Sciences at DCU. She obtained her PhD in Experimental Surface Physics and is a Fellow of the Institute of Physics and a Chartered Physicist. Her research interests include Physics Education, including the development of the curriculum, instruction and assessment models in STEM education at all levels of education, from primary school to PhD level. Eilish teaches undergraduate and postgraduate physics modules for both students and STEM teachers. She has also served on the management committee of the BSc Science Education since 2000 and received funding from the HEA in 2020 to coordinate a new national upskilling programme for physics teachers.



Dr. Sebastian Moncaleano (Assessment of Workplace Bullying)

Sebastian is a Senior Research Specialist in Digital Assessment Development at the TIMSS and PIRLS International Study Centre, Lynch School of Education, Boston College. He previously completed a PhD in Measurement, Evaluation, Statistics and Assessment at Boston College. He majored in mathematics with a minor in education at Universidad de los Andes, Colombia. Following this, he worked for two years as a maths teacher at an international high school in Bogota. Sebastian's current research is relevant to innovative item development including new item formats and interactive elements to enhance digital assessments.



Prof. Mark Morgan (Assessment of Non-Cognitive Constructs)

Mark was the first Cregan Professor appointed in St. Patrick's College, Drumcondra (now DCU's Institute of Education). His scholarship can be categorised under four broad headings: motivation and job satisfaction, substance misuse and prevention, literacy, and educational disadvantage. These are derived from his training and experience as both a primary teacher and a social psychologist. Mark co-delivered the annual CARPE lecture in October 2018.



Prof. Damian Murchan (Assessment in the Primary School)

Damian is an Associate Professor and teaches at the School of Education in Trinity College Dublin, the University of Dublin and is a Fellow of the Association for Educational Assessment – Europe (AEA-E). Damian collaborated with CARPE staff on the discussion paper for the NCCA on assessment in the re-developed primary school curriculum. He also acted as a reviewed for the CARPE/INTO Standardised Testing Project. Damian was previously Head of the School of Education in Trinity College Dublin where he led a school with extensive national and international engagement with teaching, research and policy. A former teacher and school principal, Damian's research interests include educational reform, assessment methods, e-learning and assessment, incorporation of key skills into the curriculum, and teacher professional development. He co-chairs a consortium established by Trinity and the Educational Research Centre Drumcondra and will host the Annual Meeting of the Association for Educational Assessment – Europe in Dublin in November 2022.



Dr. Deirbhile Nic Craith (Standardised Testing Project)

Deirbhile is Director of Education and Research, and Assistant General Secretary with the Irish National Teachers' Organisation (INTO). Her remit includes education issues and policy, including curriculum and assessment, special education, social inclusion, early childhood education and Gaeilge. She represents the INTO on many external education bodies including the Council of the NCCA, An Chomhairle um Oideachas Gaeltachta and Gaelscolaíochta, and the Standing Committee of Heads of Education and Teacher Unions. She is also editor of the Irish Teachers' Journal. Deirbhile holds both a Masters and a PhD in Education from University College Dublin.



Prof. James O'Higgins Norman (Assessment of Bullying in the Workplace)

James holds the UNESCO Chair on Tackling Bullying in Schools and Cyberspace and is Director of the National Anti-Bullying Centre, DCU. He is best known for his research on homophobic bullying in second-level schools in Ireland which has drawn international media attention and was referenced in parliamentary proceedings in Ireland and at the EU Commission when these bodies were debating the implementation of policy and laws on bullying in schools. His other research interests include gender and cyberbullying, and diversity and bullying in schools. He has also taught professional ethics at University College Dublin and was previously a post-primary school teacher.



Naoimh O'Reilly (ACT@DCU Project)

Naoimh is a lecturer at the School of Business at DCU. She holds a B.A. (Hons) in International Marketing and Languages and an MBS in Strategic International Marketing, both from DCU. Her teaching interests lie in digital marketing, and she is currently pursuing her PhD in Technology Enhanced Learning at Lancaster University.



Dr. Katherine Reynolds (Assessment of Critical Thinking at DCU; Shortened Assessments: MoC and Micro-Credentiailling)

Katherine received her doctorate from the Department of Measurement, Evaluation, Statistics and Assessment at the Lynch School of Education, Boston College. While at Boston College, she worked as a graduate assistant at the TIMSS and PIRLS International Study Centre. Prior to graduate studies, she taught 7th and 8th grade science in Charlotte, North Carolina. She holds a B.A. in History and an M.S. in Educational Policy Studies and Evaluation, both from the University of Kentucky. Katherine's current role is Assistant Research Director at the TIMSS and PIRLS International Study Centre, Boston College. Katherine manages the development of the TIMSS and PIRLS context questionnaires. Katherine's research interests include scale development and university student-faculty interaction.



Dr. Darina Scully (Various Projects)

Darina is an Assistant Professor in Child/Adolescent Learning and Development, Wellbeing and SPHE in the School of Human Development, DCU. She holds a B.A. (Mod.) and a PhD in psychology from Trinity College, Dublin. Darina has extensive research experience in education and the social sciences, particularly in quantitative methods and statistical analysis. From 2016 to 2019, she held the post of Prometric Postdoctoral Research in CARPE, where her work focused on various issues in assessment and test development in educational and workplace settings. Prior to this, she worked as a Research Assistant in the Educational Research Centre, where she was involved in several high profile national and international research projects, including TIMMS and the evaluation of the School Support Programme under DEID (Delivering Equality of Opportunity in Schools).



Prof. Steven Stemler (SJTs)

Steven is a Professor of Psychology at the Psychology Department, Wesleyan University, Connecticut. He has spent nearly two decades systematically studying the purposes of school (elementary through to post-primary) and how those purposes get measured via testing. Steven and his colleagues have developed a number of innovative new ways of measuring broad constructs such as creativity, cultural competence, practical intelligence and ethical reasoning. Steven has also published more than 50 peer-reviewed articles, books and chapters.



Olivia Szendey (Assessment of Transversal skills in STEM)

Olivia is a doctoral student studying Measurement, Evaluation, Statistics and Assessment at the Lynch School of Education and Human Development at Boston College. She holds a B.S. in psychology from the James Madison University. Her research interests include campus climate, quantitative critical methodologies for secondary data analysis in higher education and measurement of complex constructs. As Boston College Olivia works as a graduate assistant at the office of Institutional Research, Planning and Assessment. She is also a research assistant for Dr. Larry Ludlow and is working with him and others to develop a scale measuring “leading a life of meaning and purpose”.



Dr. Linda Waters (Various Projects)

Linda began her career in testing at the Educational Testing Service in Princeton, New Jersey, working as part of the team to transition the first large-scale United States-based licensure examination program from paper-and-pencil testing to computer-based testing. Dr. Waters joined Prometric in 2004 and is now Vice President. She has previously held faculty positions at the University of South Carolina and the University of Delaware. Linda is also a registered nurse and graduate of the University of Delaware with a PhD in Educational Measurement and Statistics. She is also Prometric’s representative on the CARPE advisory panel.

International Research Advisors



Dr. Marguerite Clarke

Marguerite is a Senior Education Specialist in the Human Development Network of the World Bank. She holds a PhD in Educational Measurement and Program Evaluation from Boston College. A former primary and secondary school teacher, she now leads the Bank's work program on learning assessment. Marguerite is currently based in India, where her work has focused on the impact of citizen-led assessments in India and elsewhere.



Dr. Eugenio Gonzalez

Eugenio has a vast and varied experience in the field of large-scale assessments in education. He is a strategic advisor at the Educational Testing Service (ETS) and the Director of the IEA-ETS Research Institute. His previous roles include Head of the IEA's (International Association for the Evaluation of Educational Achievement) Research and Analysis Unit, and Director of Quality Control and Field Operations at the US National Assessment of Educational Progress (NAEP). While working on his doctorate at Boston College, he oversaw the development and implementation of TIMSS and PIRLS.



Prof. Therese Hopfenbeck

Therese is a professor of Educational Assessment at the University of Oxford and Director of the University Centre for Educational Assessment. Originally a secondary school teacher with many years of experience, Therese has worked as a school district supervisor and as a consultant on national examinations for the Norwegian Directorate for Education. Therese is elected Vice-President of the Association for Educational Assessment – Europe (AEA-E) and Lead Editor of the journal *Assessment in Education, Principle, Policy and Practice*. Therese has been published widely in her native Norway, in the UK and across the English speaking world.



Prof. Larry Ludlow

Larry chairs the Department of Measurement, Evaluation, Statistics and Assessment (MESA) at the Lynch School of Education, Boston College. His expertise and research interests include Rasch model applications, psychometrics, applied statistics, student ratings of instruction and teacher attrition models. During his career, Larry has rigorously and internationally advanced how learning is assessed and how we improve teaching. Larry received the Association for Assessment and Research in Counselling/Masurement and Evaluation in Counselling and Development Patricia B. Elmore Award for outstanding research in Measurement and Evaluation. Larry is also a Fellow with the American Educational Research Association.



Prof. Laura O'Dwyer

Laura is a professor at the Department of Educational Research, Measurement, and Evaluation at the Lynch School of Education at Boston College. She teaches courses in applied data analysis, quantitative research methods, survey construction and experimental design. Laura's research focuses on examining the impact of technology-based interventions on student and teacher outcomes, and on international comparative studies in education. She has conducted several studies that employ randomised experimental designs to examine educational interventions.



Dr. Matthias von Davier

Matthias is a Distinguished Research Scientist at the National Board of Medical Examiners (NBME), in Philadelphia. Previously, he was Senior Research Director in the Research and Development Division at the Educational Testing Service (ETS), and co-director of the Centre for Global Assessment at ETS, where he led psychometric research and operational analysis for assessments such as PISA, PIACC, TIMSS and PIRLS. He earned his PhD in Psychology from the University of Kiel, Germany, in 1996, specialising in psychometrics. His areas of expertise include item response theory, latent class analysis, diagnostic classification models (distribution models, computational statistics, person-fit, item-fit etc.) and the analytical methodologies used in large-scale educational surveys. Matthias is currently on the prestigious AERA 2021 Fellows list. His current work is concerned with extending, implementing and applying multidimensional IRT, IRTree, and latent response models, as well as speed/accuracy models to process data research using log-file and timing data from large scale tests e.g., PISA, PIAAC.

Linked Centres

CARPE and the National Anti-Bullying Research and Resource Centre (ABC) at DCU are linked through the Assessment of Bullying in the Workplace Project. See: <https://antibullyingcentre.ie>



CARPE is linked to the National Institute for Digital Learning (NIDL) through its research on learning portfolios and the assessment of transversal skills in STEM funded by an Erasmus+ grant. NIDL Director, Professor Mark Brown was co-author with Darina Scully and Michael O'Leary on the Review on the Use of Learning Portfolios in Higher Education, published in February 2018. See: <https://www.dcu.ie/nidl>



The current Director of the Oxford University Centre for Educational Assessment (OUCEA), Professor Therese Hopfenbeck, plays an important advisory role in CARPE. Prof. Hopfenbeck was also the external examiner for Anastasios Karakolidis' doctoral thesis. See: <http://oucea.education.ox.ac.uk>



CASTeL is Ireland's largest research centre in science, technology, Engineering and Mathematics. CASTeL and CARPE are collaborating on the ATS-STEM project funded by Erasmus. See: <https://castel.ie/>



Research

In 2020, CARPE completed a number of high profile projects (as outlined in last year's report [here](#)). CARPE continues to pursue an extensive research programme and is currently engaged in several research projects addressing many of the challenges posed by existing and new conceptions of assessment. Some of our research projects focus on Irish educational assessment, whilst others address more global issues such as the assessment of “hard to measure” skills, technology-based assessment and issues pertaining to the field of certification and licensure assessment. An overview of all our research projects and the progress made with each in the past twelve months is provided below.

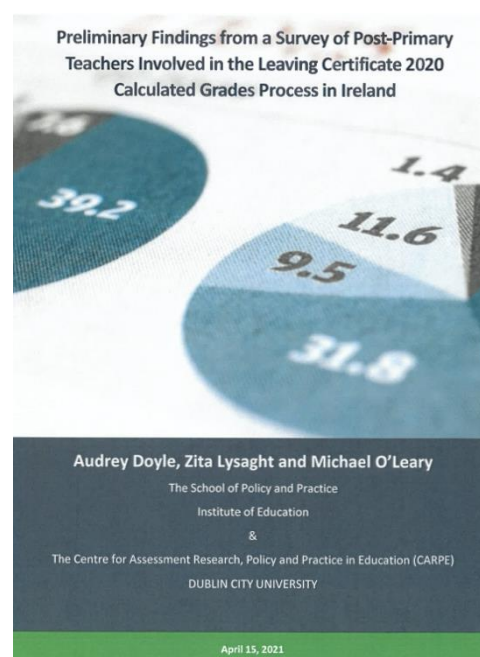
Ongoing Research

(i) Leaving Certificate Calculated Grades: Teachers' Reflections on the Process and on Assessment

Project Directors: Audrey Doyle, Zita Lysaght and Michael O'Leary.

Cancellation of the Leaving Certificate (LC) examinations in 2020 because of the COVID-19 pandemic and the subsequent involvement of post-primary teachers in estimating marks and ranks for their own pupils as part of the Calculated Grades (CG) process were unique events in the history of Irish education. In the Autumn of 2020, a survey of a voluntary sample of teachers took place. This survey was designed to capture post-primary teachers' reflections on their experiences of estimating marks/ranks for their students and their reflections on the role they play in assessment. Data from a total of 713 teachers was collected and a [report containing preliminary findings from the survey](#) was published in April 2021. The results of this survey provide valuable

insights into student assessment without final examinations. A paper detailing further findings from this survey was published in *Irish Educational Studies* in May 2021. This research has since been featured in numerous media outlets including, The Irish Times and The Irish Independent newspapers. Dr. Zita Lysaght was also interviewed and spoke about the results of this research on Kildare FM in April 2021. A snapshot of the media coverage regarding the calculated grades report can be found in the 'CARPE in the media' Section of this report on page 48 and on the [CARPE Twitter account](#). This research has also since been featured in the [European Educational Research Association Blog](#).



(ii) Remote Proctoring

Project Directors: Gemma Cherry, Michael O’Leary, Li-Ann Kuan (Prometric) and Linda Waters (Prometric).

Remote proctoring refers to the process of using technology in lieu of face-to-face proctoring when examinations are administered online. In 2017, a research brief was submitted to Prometric which outlined the benefits and main concerns associated with remote proctoring. In 2020, researchers at CARPE updated this research through two memos. Both memos highlighted that empirical research in this area was limited, especially in relation to certification and licensure assessments. Considering the COVID-19 pandemic, the necessity of remote proctoring significantly increased when many bricks-and-mortar testing centres closed due to health concerns. This meant that tests changed from standardised to non-standardised administration because tests were being taken at home using personal desktop or laptop devices. The concern with this is whether outcomes from tests taken in testing centres and via live remote proctoring differ? It seems likely that the demand for remote proctoring options will continue to increase over the next decade and as such, it is critical that we increase our understanding of this practice through research.

As a response to the limited empirical research in this area, a study was conducted by CARPE and Prometric personnel to investigate the equivalence of candidate outcomes and test psychometric properties across tests taken in test centres and via live remote proctoring modes. The research project endeavoured to answer the following 2 research questions:

RQ1: Are outcomes for candidates equivalent across test centre and live remote proctoring modes?

RQ2: Are the psychometric properties of tests equivalent across test centre and live remote proctoring modes?

Data from a total of $n = 14,097$ test candidates was analysed. These candidates spanned 4 US States and sat high-stakes professional licensure examinations in the field of insurance. At the time of writing, a paper detailing the background to the study and the findings is currently under review in *Computers and Education Open*. A flyer summarising the study findings was presented to Prometric in March 2021.

This is an ongoing research project that is currently investigating how candidate demographic information may explain significant differences in individual tests. A follow-on study is also currently being conducted using data from health/medicine examinations. Drawing on this data will significantly increase the generalisability of the current findings that pertain to insurance examinations only.

(iii) High Stakes Assessment in the Era of COVID-19: Interruption, Transformation or Regression?

Project Directors: Louise Hayward (University of Glasgow) and Michael O'Leary

A special issue of *Assessment in Education: Principles, Policy and Practice* will be edited by Louise Hayward and Michael O'Leary. It is envisioned that this special issue will contribute to the debate regarding what has been learnt from the experience of COVID-19 and how that learning may inform the future of high-stakes assessment both for individual nations and internationally. Empirical and conceptual papers were considered that address relevant topics, such as the impact of COVID-19 on future assessment thinking. This special issue will be published in 2022.



(iv) A Conceptual Framework for Exploring Change in Teacher Assessment Agency

Project Directors: Louise Hayward (University of Glasgow), Jana Groß Ophoff (University of Tuebingen), Sotiria Kanavidou (University of Southampton), Michael O'Leary (CARPE) and Dennis Opposs (Ofqual).

This research project focuses on how teachers' agency in assessment played out in the high-stakes context of terminal examinations at the end of secondary education in England, Germany, Greece, Scotland, and Ireland. This research involves an analysis of key policy documents. This work is being conducted under the auspices of the International Congress for School Effectiveness and Improvement (ICSEI). Authors from all five countries are currently preparing a paper for publication in 2022.

(v) High Stakes Examinations in the Era of Covid-19

Project Directors: Vasiliki Pitsia, Michael O'Leary (CARPE), Marguerite Clarke, Diego Armando, Luna Bazaldua, Julia Liberman and Victoria Levin (World Bank).

As the COVID-19 pandemic forced the closure of more than 90 percent of schools across the world, ministries of education had to rethink how to make high-stakes decisions. These are decisions that would shape their students' futures. This research, which is a joint venture between CARPE and the World Bank, sets out to capture the diversity of responses across countries when COVID-19 placed plans to hold high-stakes examinations in jeopardy. The responses of different countries from different parts of the world and with different economic profiles included: (i) shifting to online administration of high-stakes examinations, (ii) postponing the examinations to a later date, (iii) continuing the examinations as planned, with various social distancing/safety measures, or (iv) cancelling the examinations altogether

and drawing on alternative sources of information to make decisions about students. This research describes the different approaches adopted by countries, reviews the evidence on what worked well and what did not, and highlights important lessons that were learnt from these approaches. A report on the work is due to be published in 2022.

(vi) Twenty-Five Years of Research on Leaving Certificate Assessment

Project Directors: Michael O’Leary and Gillian O’Connor

This project is focused on developing a structured/searchable database of all academic papers and research reports that refer to the Leaving Certificate assessment, published between 1995 and 2020. Each entry contains the full citation, an abstract, type of publication, key themes explored and details pertaining to the research methodology, sample size and key informants for empirical studies. The database currently has more than 100 entries, all of which are hyperlinked to a digital copy of the paper/report. The completed database will be publically available on the CARPE website in Autumn 2022.

(vii) Assessment of Bullying in the Workplace

Project Directors: Zita Lysaght, Angela Mazzone (Anti Bullying Centre), Michael O’Leary, Conor Scully (CARPE)

One of the most important tools in combating bullying behaviours in schools and workplaces is to ensure that people have a good knowledge and understanding of what bullying behaviour looks like so that they can implement appropriate procedures. For the purposes of this research study, workplace bullying is conceptualised as behaviours that involve an imbalance of power, that are repeated over time, that are intentional and that make the target feel threatened, humiliated stressed or unsafe at work. This project is focused on creating a measurable instrument that can be used to assess people’s ability to identify bullying in the workplace. To date, bullying assessment measures have generally focused on bullying in schools and interactions between peers.

In 2020, the CARPE team, in collaboration with subject matter experts from the IoE’s Anti Bullying Centre (ABC), developed several scenarios that can be used to measure people’s awareness of bullying behaviours in workplace settings. These scenarios were field tested with 1000 workplace participants in the Spring of 2021 and data from the study are currently being analysed. A chapter outlining the research methodology used is forthcoming in SAGE Research Methods: Doing Research Online.

This research is a collaborative venture involving CARPE and the Anti Bullying Centre (ABC) at DCU. When developed (early 2022), the workplace bullying instrument will be made freely

available to organisations interested in planning programmes of professional development for staff.

(viii) Assessment of Learning about Well-Being Project

Project Directors: Darina Scully (School of Human Development), Nisha Crosbie/Deirdre O'Brien (School of Psychology) and Michael O'Leary.

Well-being of the child/young person and its significance for developmental and educational outcomes are unequivocal. There is an abundance of instruments in existence that purport to measure various aspects of wellbeing, or an individual's subjective state of wellbeing. However, a heretofore understudied area is how young people's knowledge and understanding of the concept can be assessed. Wellbeing has been identified as a key curricular area in the reformed Junior Cycle programme, and the NCCA's Guidelines for Wellbeing in Junior Cycle (2017) call for the use of a wide variety of approaches in assessing student's learning in this area. Consequently, the development of tools that can aid student and teacher judgement making about student's progress in knowing about and understanding wellbeing may prove useful. With this in mind, this study seeks to examine the potential use of scenarios/vignettes to achieve this.

Nisha Crosbie and Deirdre O'Brien, both from the School of Psychology at DCU, have been completing an internship at CARPE, where they have been working closely with Darina and Michael on this project. There are now 25 scenario-based/situational judgement type items that have been developed and critically reviewed. The ultimate aim is that not only will summative judgements regarding students' progress be informed but also that formative assessment activities will be promoted, such as classroom discussions and debates.

(ix) The use of cross-national achievement surveys for education policy reform in the European Union

Project Directors: Anne Looney, Michael O'Leary, Gerry Shiel and Darina Scully

This research contributes to a book volume that examines the range and salience of different international achievement surveys for policy design and reform within European countries: Germany, France, Italy, Netherlands, Sweden, Finland, Ireland, Poland, Estonia, and Slovakia. Collectively, the national profiles will provide a critical analysis of the use (and misuses) of cross-national achievement surveys for monitoring educational outcomes and policy formation.

(x) Student Experience of Feedback

Project Directors: Michael O’Leary, Zita Lysaght and Sean McGrath (Glanmire College)

This study is being conducted jointly by CARPE and Glanmire Community College, Cork and is designed to gather data on how second year students in school experience feedback from their teachers. Using an online questionnaire, the study aims to gather data from students on variables such as how often they receive feedback and what types of feedback they find most useful.

(xi) Assessment for Teaching and Learning (ATL)

Project Directors: Zita Lysaght

The Assessment for Learning and Teaching (ATL) Project has its roots in assessment challenges identified from research conducted in the Irish context. This research highlighted: (a) The dearth of assessment instruments nationally and internationally to capture changes in children’s learning arising from exposure to, and engagement with, AfL pedagogy; (b) The nature and extent of the professional challenges that teachers face when trying to implement AfL with fidelity and; (c) The urgent need for a programme of continuous professional development to be designed to support teachers, at scale, to learn about AfL and integrate it into their day-to-day practice.

Since the initiation of the ATL project, significant process has been made in all three areas: The Assessment for Learning Audit instrument (AfLAI) has been used across a range of Irish primary schools and in educational systems in Australia, Norway, Malaysia, Chile and South Africa. Work is currently underway in adapting the AfLAI for use in secondary schools and by students in both primary and secondary settings. The research focused Assessment for Learning Measurement instrument (AfLMI), first developed in 2013, is being updated with data from almost 600 Irish primary teachers. Programmes of professional development continue to be implemented in pre-service undergraduate teacher education, in postgraduate teacher education and as part of site based in-service teacher education.

In March 2021, this research was highlighted in the American Educational Research Association’s (AERA) Special Interest Group in *Classroom Assessment* Newsletter.



(xii) An Evaluation of Minecraft: Education Edition (M.EE) as a tool for Teaching, Learning and Assessment in the Irish Primary School

Project Directors: Michael O’Leary, Deirdre Butler, Eadaoin Slattery (IOE) and Kevin Marshall (Microsoft Ireland)

Minecraft is a ‘sandbox’ video game first released to the public in 2009, where players control a virtual avatar in a Lego-like world made up of blocks that can be moved to construct buildings and used to create items and structures. It is currently the second most popular video game of all time, with more than 100,000,000 copies sold worldwide. Schools in many countries, including the United States and Sweden, have decided to integrate the education version of the game (Minecraft: Education Edition) into their curricula. Minecraft: Education Edition is a platform that allows students to freely explore, imagine and create in virtual environments and collaborative worlds that have special features specifically designed for classroom use. In DCU, the Institute of Education (IoE) has a dedicated Minecraft Studio (opened in December 2018) that student teachers can use to explore how innovative virtual and physical learning spaces can transform the curriculum and engage young people with new educational environments. CARPE and the IOE are currently collaborating with Microsoft Ireland on a new initiative that aims to explore the value of Minecraft in primary schools across the island of Ireland.

(xiii) Multimedia Items in Technology-Based Assessments (PhD Thesis)

PhD Candidate: Paula Lehane

Project Supervisors: Michael O’Leary, Mark Brown and Darina Scully

The use of digital devices and technology to conduct assessments in educational settings has become more and more prevalent in recent times. While paper-based assessments are largely restricted to traditional item types such as multiple choice or short answer questions, the possibilities for items in TBAs are more extensive (e.g., drag-and-drop items, simulations) and continue to expand as technology develops. However, the impact of these item types and their interaction with multimedia stimuli on test-taker performance and behaviour in *assessment* situations has yet to be fully clarified. Failure to address this shortcoming in research could lead to poorly designed digital assessments that could impact on the accuracy of interpretations being made from such tests.

Paula’s PhD project aims to examine the influence of multimedia items and different item types on test-taker performance in TBAs by investigating the following research questions using performance data (in the form of test scores) and process data (in the form of eye movement data):

- How to test-takers allocate attention in TBAs that include multimedia stimuli and involve different item types (e.g., multiple-choice questions, drag-and-drop items)?

- What is the impact of (i) multimedia stimuli and (ii) item types on test-taker performance in TBAs?
- Is there a difference in test-taker performance and attentional allocation behaviours in TBAs involving different types of multimedia items?

In August 2021, Paula submitted her PhD Thesis. Her Viva will take place in October 2021.

This research is funded by the Irish Research Council under the prestigious government of Ireland Postgraduate Programme.



(xiv) Inter-Rater reliability in Objective Structured Clinical Examinations for Nurses (PhD Thesis)

PhD Candidate: Conor Scully

Supervisors: Mary Kelly (School of Nursing), Zita Lysaght and Michael O'Leary

Objective Structured Clinical Examinations (OSCEs) are an assessment format common in medicine and nursing. In an OSCE, a student moves through a series of stations at which they must complete a specific task e.g., recording patient history. They are judged on their performance at each station by a trained examiner, using a scoring rubric specific to that station. Compared to previous examination methods in medicine and nursing, the OCSE is generally considered to produce reliable scores, but score reliability is often at a less than acceptable level.

Assessor cognition is a field of research that seeks to understand how exactly assessors in examinations make decisions about student performances. It is increasingly accepted that because assessors are all unique, they are likely to judge students in idiosyncratic ways. This study will employ a mixed-methods approach to understand how nursing OSCE assessors make decisions about students, and whether the cognitive processes through which assessors go have an impact on score reliability. Additionally, it will be investigated the extent to which score reliability can be improved if there is increased alignment between the scoring rubrics and assessors' cognitive processes. In June 2021, Conor completed his viva to transfer from the PhD track to the PhD register and has now begun the third year of his doctoral work.

Research Completed Since October 2020

(i) National Commission for Certifying Agencies Assessment of Live Remote Proctoring

Project Directors: Gemma Cherry, Michael O’Leary, and Darina Scully.

This study, conducted under the auspices of the National Commission for Certifying Agencies (NCCA) in cooperation with CARPE and Prometric, was undertaken to evaluate the extent to which credentialling and testing programmes in the US using remote proctoring were meeting NCCA standards. Live remote proctoring was



February 2021

Report on the NCCA Assessment of Live Remote Proctoring

defined by the Commission as remote proctoring that occurs with a person actively watching and monitoring a candidate, in real time, during test administration and providing safeguarding for exam integrity and validity similar to in-person proctoring. Nine programmes volunteered to participate in this research and submitted self-study reports in June 2020. These included technical reports, that compared candidate outcomes based on live remote proctoring and other delivery methods (for example, computer-based testing in test centres and paper-based testing). A subset of the NCCA standards was used to evaluate each of the programmes self-study reports. The results of this research were published in a report titled, [*'Report on the NCCA Assessment of Live Remote Proctoring'*](#) in February 2021.

(ii) Human Capital Initiative (DCU)

Project Directors: A DCU-wide funding application. Michael O’Leary represents CARPE

Future jobs Ireland 2019 states that, “... by 2025, our workers and enterprises will be operating in a changed economy. Technology continues to herald new ways of doing business and new economic opportunities”. Central to this are objectives to enhance skills, develop and attract talent to Ireland. Transversal skills along with core competencies in numeracy, literacy and digital technologies are critical for work in all sectors. The Human Capital Initiative (HCI) will increase capacity in higher education focused programmes designed to meet these priority skills needed for enterprise.

In 2020, CARPE supported DCU’s application for a HCI grant that would allow DCU to develop courses of study that would enhance the transversal skills and competences of postgraduate students. The application was successful and DCU has been awarded a €20 million investment. This 4-year project titled *'DCU Futures'* aims to transform the learning of undergraduate students, reconceptualise how we teach, introduce new areas of study, embed digital literacies and enable students to thrive in the post COVID-19 world.

(iii) Assessment of Critical Thinking in Dublin City University (ACT@DCU)

Project Director: Michael O’Leary

ACT@DCU is an ongoing research project that is investigating the extent to which an online test developed by the Educational Testing Service (ETS) in the United States, to assess critical thinking in higher education, is suitable for use in DCU. This project is an interdisciplinary collaboration between CARPE and researchers from DCU’s School of Business, Computing, and Health and Human Performance. A pilot study of the HEIghten CT test involving 214 First year and 264 Fourth year DCU students was conducted between September 2017 and May 2018 and provides reasonable evidence to support its use in an Irish context. A paper detailing the background to the study and the findings has since been published in the *Journal of Higher Education Theory and Practice*. In December 2020, The National Institute for Studies in Education (NISE), at the University of Limerick, held a virtual research seminar in which Michael discussed this research and the findings obtained thus far.



Over time the intention is that data from the test will help to facilitate conversations among staff regarding pedagogy, curricula and educational interventions to improve teaching and learning of Critical Thinking; be integrated with other non-cognitive and co-curricular indicators of student success at DCU; and provide evidence of institutional and program-level learning outcomes in Critical Thinking.

(iv) Use of Technology for Teaching in response to COVID-19 in post-primary schools

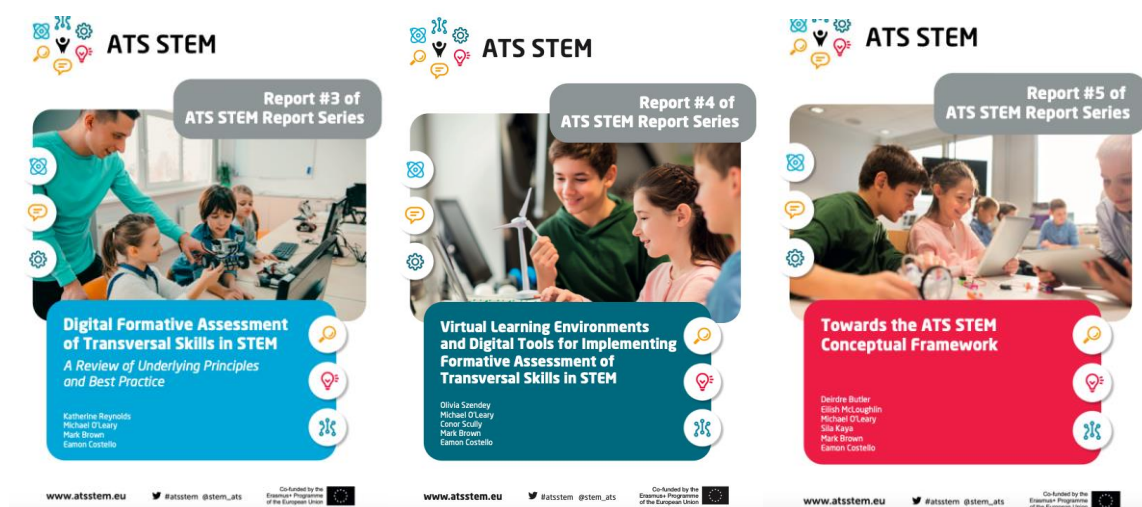
Project Directors: Darina Scully, Paula Lehane and Conor Scully

As the Covid-19 pandemic jeopardised public health and caused economic chaos, it was essential that the global education community found ways to attend to the educational needs of children and young people. In the Republic of Ireland, policy makers strongly recommended the use of technology to ensure continuity of learning for post-primary students (Department of Education and Skills, 2020). However, previous research suggests that Irish schools’ use of such tools is heavily influenced by several factors. These include teacher digital competence (as conceptualised by Redecker’s (2017) framework), school context, internet infrastructure and student access to devices (e.g., Eivers, 2019). To examine how Irish post-primary schools used technology-based strategies to minimise disruption to their students’ learning during the Covid-19 pandemic, a digital survey was carried out with a random sample of 70 school leaders. The results of this survey were published in *Technology, Pedagogy and Education* in January 2021.

(v) Assessment of Transversal Skills in STEM

Project Partners: CARPE, National Institute for Digital Learning (NIDL), CASTeL (Centre for the Advancement of STEM Teaching and Learning), and representatives from education ministries in the following countries: Ireland, Austria, Cyprus, Belgium, Slovenia, Spain, Finland and Sweden.

This is an ambitious DCU led project that secured €2.34 million in Erasmus+ funding. Involving 8 EU countries and working with 120 schools across Europe, the partners will devise, test and scale a new digital assessment for STEM education that engages and enhances students' transversal skills such as teamwork, communication and discipline-specific critical thinking. CARPE personnel worked with DCU colleagues to provide the theoretical and operational frameworks of the research ([Report #5](#)). CARPE is also responsible for a review and synthesis of the research literature on STEM formative digital assessment ([Report #3](#)) and for a report on virtual learning environments (VLEs) and digital tools for implementing formative assessment in STEM ([Report #4](#)). These reports highlight how students can best be scaffolded towards the development of key STEM skills and how digital tool can capture the evidence for this and augment teaching practices to help provide constructive feedback on student progress.



(vi) Interviews as a Selection Tool for Initial Teacher Education

Project Directors: Paula Lehane, Zita Lysaght and Michael O'Leary

Even when other factors such as student background and prior attainment are controlled for, having a 'good' teacher is one of the most important predictors of student success (Slater et al., 2009). Therefore, the goal of Initial Teacher Education (ITE) in Ireland should be to produce these 'good' teachers for employment in primary and post-primary schools. To achieve this, the admissions procedures for ITE programmes have a responsibility to select those applicants who are most suited to the profession and most likely to succeed in the required preparatory courses.

Many countries, including Ireland, now consider a range of admission criteria and selection tools when screening applicants for entry to ITE. Most Irish institutions use applicant performance on an interview as a selection tool for postgraduate ITE (Darmody and Smyth, 2016). However, research on the efficacy of interviews as a selection measure for ITE programmes is mixed. CARPE has recently conducted an in-depth literature review that aims to synthesis what research has found about the efficacy, or otherwise, of interviews as a selection mechanism for university based postgraduate programmes of teacher education. Based on this review, recommendations for future practice and policy were formulated. The results of this research have now been published in *The European Journal of Teacher Education*. This paper draws on validity theory and uses key commentaries and studies prominent in the literature to provide a perspective on the extent to which a traditional interview can provide data that can be used to make good decisions regarding applicants for ITE.

(vii) Irish students' performance at the upper levels of achievement in mathematics and science across national and international assessments (PhD Thesis)

PhD Candidate: Vasiliki Pitsia

Project Supervisors: Zita Lysaght, Michael O'Leary and Gerry Shiel

Students in Ireland have often performed well on national and international assessments of mathematics and science, however, there is a noticeable absence of students scoring at the highest proficiency levels. Additionally, the scores of high achievers in Ireland (i.e., those performing in the national 90th percentile in these subjects) have tended to be lower than their counterparts in other countries. A pattern of declining performance among high achievers have been also detected in the Irish state examinations. Reports of low performance among students in Ireland on national and international assessments have not yet been given sufficient attention. Considering Ireland's overall performance in science and mathematics and the large proportion of high achievers in reading literacy, it seems that more Irish students have the potential to perform at the highest levels.

With all of the above in mind, this study aimed to undertake an in-depth investigation of the trends and nature of high achievement in mathematics and science in Ireland, by combining national and international large-scale assessment data. The overarching aims are to inform policy and practice, to provide country-specific recommendations, and to advance the development of exceptional skills needed to succeed in modern, competitive society.

Vasiliki successfully defended her doctoral thesis in September 2020, passing with minor revisions. After making the changes that the examiners required, she has now officially finished and been awarded her degree. This research was funded by the Irish Research Council under the prestigious government of Ireland Postgraduate Programme.

Research Outputs October 2020 – September 2021

Peer-Reviewed Articles

Gardner, J., O’Leary, M. and Yuan, L. (2021). Artificial Intelligence in educational assessment: ‘Breakthrough? Or buncombe and ballyhoo?’ *Journal of Computer Assisted Learning*, 37(5), 1207 – 1216. <https://onlinelibrary.wiley.com/doi/10.1111/jcal.12577>

Pitsia, V., Karakolidis, A. and Lehane, P. (2021) Investigating the use of assessment data by primary school teachers: Insights from a large-scale survey in Ireland. *Educational Assessment*, 26 (3), 145 – 162.
<https://www.tandfonline.com/doi/full/10.1080/10627197.2021.1917358>

Karakolidis, A., Scully, D. and O’Leary, M. (2021). Eight issues to consider when developing videos for the assessment of complex constructs. *Practical Assessment, Research and Evaluation*, Vol. 26, Article 15. <https://scholarworks.umass.edu/pare/vol26/iss1/15/>

Karakolidis, A., O’Leary, M. and Scully, D. (2021). Animated videos in assessment: comparing validity evidence from and test-takers’ reactions to an animated and a text-based situational judgement test. *International Journal of Testing*, 21 (2), 57 – 59.
<https://www.tandfonline.com/doi/full/10.1080/15305058.2021.1916505>

Doyle, A., Lysaght, Z. and O’Leary, M. (2021). High stakes assessment policy implementation in the time of COVID-19: The case of calculated grades in Ireland. *Irish Educational Studies*, 40 (2), 385 - 398. <https://www.tandfonline.com/doi/full/10.1080/03323315.2021.1916565>

Lehane, P., Lysaght, Z. and O’Leary, M. (2021). A validity perspective on interviews as a selection mechanism for entry to initial teacher education programmes. *European Journal of Teacher Education*, 44 (3).
<https://www.tandfonline.com/doi/abs/10.1080/02619768.2021.1920920?journalCode=cete20>

Scully, D., Lehane, P. and Scully, C. (2021) ‘It’s no longer scary’: digital learning before and during the Covid-19 pandemic in Irish secondary schools. *Teacher, Pedagogy and Education*, 30 (1), 159 – 181.
<https://www.tandfonline.com/doi/full/10.1080/1475939X.2020.1854844?src=>

Pitsia, V. and Mazzone, A. (2020). The association of individual and contextual variables with bullying victimisation: a cross-national comparison between Ireland and Lithuania. *European Journal of Psychology of Education*. <https://link.springer.com/article/10.1007/s10212-020-00514-0>

Pitsia, V. and Kent, G. (2021). School readiness of five-year-old children from socio-economically disadvantaged areas: Evidence from the Preparing for Life evaluation. *Irish Educational Studies*.

<https://www.tandfonline.com/doi/abs/10.1080/03323315.2021.1964567>

Murphy, C., Mallon, B., Smith, G., Kelly, O., Pitsia, V. and Martinez Sainz, G. (2021). The influence of a teachers' professional development programme on primary school students' understanding of and attitudes towards sustainability. *Environmental Education Research*, 27(7), pp. 1011-1036.

<https://www.tandfonline.com/doi/abs/10.1080/13504622.2021.1889470?journalCode=ceer20>

Reports

Doyle, A., Lysaght, Z. and O'Leary, M. (2021). *Preliminary findings from a survey of post-primary teachers involved in the Leaving certificate 2020 calculated grades process in Ireland*. Dublin: Centre for Assessment, Research, Policy and Practice in education (CARPE), Dublin City University.

Commissioned Reports

Gardner, J. (2021). *Bachelor of Education (BEd) Review 2021: Analysis of the IoE Staff Survey on the BEd Programme (2017-2021)*. Dublin: Centre for Assessment, Research, Policy and Practice in Education (CARPE), Dublin City University.

Lehane, P. (2021). *Bachelor of Education (BEd) Review 2021: Students' views on the BEd programme (2017-2021)*. Dublin: Centre for Assessment, Research, Policy and Practice in Education (CARPE), Dublin City University.

Industry Reports

Cherry, G. and Scully, C. (2021). *A consideration of factors affecting the use of automatic item generation (AIG) in developing examinations for licensure and certification programmes*. Unpublished manuscript, Centre for Assessment, Research, Policy and Practice in Education (CARPE), Dublin City University.

Cherry, G., O'Leary, M., Naumenko, O., Kuan, L. and Waters, L. (2021). *A comparison of outcomes across tests taken in test centers and via live remote proctoring using ProProctor™*. Unpublished Prometric white paper, Prometric, Baltimore, MD.

Accepted, Peer-Reviewed Conference Papers

Lehane, P., Scully, D. and O’Leary, M. (2021, September). *Items in Technology-Based Assessments: Examining the use of multimedia stimuli with eye movement data*. Paper presented at the European Association of Test Publishers (EATP) Virtual Conference.

Cherry, G., O’Leary, M., Kuan, L., Waters, L. and Gilvarry, E. (2021, September). *A comparison of outcomes across tests taken in test centres and via live remote proctoring (LRP)*. Paper presented at the European Association of Test Publishers (EATP) Virtual Conference.

Scully, C. (2021, September). *Examiner consistency in high-stakes performance assessments in the health sciences*. Paper presented at roundtable at the European Association of Test Publishers (EATP) Virtual Conference.

Scully, C. (2021, June). *Assessor cognition as a means of improving the reliability of nursing Objective Structured Clinical Examinations (OSCEs)*. Paper presented at the Dublin City University (DCU) Unconference.

Lehane, P., Pitsia, V. and Karakolidis, A. (2021, September). *Identifying factors predicting teachers’ use of assessment data: Findings from a national large-scale survey of primary teachers in Ireland*. Paper presented at the Virtual European Conference on Educational Research (ECER).

Lehane, P., Scully, D., and O’Leary, M. (2021, September). *Exploring primary school teachers’ use of assessment data in an Irish context – A secondary analysis of survey data*. Paper presented at the Virtual European Conference on Educational Research (ECER).

O’Leary, M., Lysaght, Z. and Doyle, A. (2021, September). *High-stakes exams in the time of Covid-19. The experiences of Irish post-primary teachers*. Paper presented at the Virtual European Conference on Educational Research (ECER).

Scully, D., Crosbie, N., O’Brien, N. and O’Leary, M. (2021, November). *“What do you think Jessica should do?”: An innovative tool to support the formative assessment of Junior Cycle students’ knowledge and understanding of wellbeing*. Paper accepted for presentation at the SPHE Network Virtual Conference.

Lysaght, Z. and Cherry, G. (2021, November). *Standardised testing in English reading and mathematics in Irish primary schools: Trends over time*. Paper accepted for presentation at the Association for Educational Assessment- Europe (AEA-E) Virtual Conference.

Cherry, G., O'Leary, M., Kuan, L. and Waters, L. (2021, November). *A comparison of outcomes from tests proctored locally in testing centres and online using live remote proctoring (LRP)*. Paper accepted for poster presentation at the Association for Educational Assessment-Europe (AEA-E) Virtual Conference.

Lehane, P. (2021, November). *Items in technology-based assessments: Examining the use of multimedia stimuli with post-primary test-takers*. Paper accepted for presentation at the Association for Educational Assessment- Europe (AEA-E) Virtual Conference.

Pitsia, V., Lysaght, Z., Shiel, G. and O'Leary, M. (2020, September). *Are we meeting the needs of high achievers? A closer look at PISA, TIMSS and PIRLS data for Ireland*. Paper presented at the Educational Studies Association of Ireland Conference 2020.

Other Outputs by Members of CARPE

Lehane, P. (2021, September 1st). *Does the use of multimedia in test questions affect the performance and behaviour of test takers?* CARPE Blog Post: <https://www.dcu.ie/carpe/carpe-blog-posts>

Scully, C. (2021, August 4th). *Inside the Black Box of the Objective Structured Clinical Examination*. CARPE Blog Post: <https://www.dcu.ie/carpe/carpe-blog-posts>

Cherry, G. (2021, June 29th). *The Educational Attainment of Pupils from Rural Locations and Schools in Northern Ireland*. CARPE Blog Post: <https://www.dcu.ie/carpe/carpe-blog-posts>

O'Leary, M. (2021, June 8th). *Leaving Certificate 2020 Calculated Grades Survey*. CARPE Blog Post: <https://www.dcu.ie/carpe/carpe-blog-posts>

Cherry, G. (2021, May 28th). *Inequalities in Educational Attainment: Reporting Findings from a new PhD Study*. Small School Rural Community Blog: <https://blogs.qub.ac.uk/smallruralschools/2021/05/28/findings-from-a-new-phd-study/>

O'Leary, M., Doyle, A. and Lysaght, Z. (2021) *Results on a Survey on Post-Primary Teachers' Experiences with Calculated Grading during COVID-19*. European Educational Research Association Blog: <https://blog.eera-ecer.de/calculated-grading-during-covid-19/>

Scully, C. (2021, September 13th). *DCU Research Made Visible Episode 8 Podcast*. Dublin City University: <https://www.dcu.ie/instituteofeducation/phdmasters-research-current-research-students>

Lysaght, Z. (2021, August 24th). *DCU Podcast: Discussing dilemmas in the application of constructive alignment and backward design with Dr Zita Lysaght*. Dublin City University: https://podcastaddict.com/episode/https%3A%2F%2Fmcdn.podbean.com%2Fmf%2Fweb%2Fiy874p%2FZitas_podcast8ytd5.mp3&podcastId=3219175

Cherry, G., O’Leary, M., Kuan, L. and Waters, L. *In-Centre Proctoring vs. Live Remote Proctoring Research Study*. Prometric Flyer.

Cherry, G., O’Leary, M., Kuan, L. and Waters, L. *Test-Centre Proctoring vs. Live Remote Proctoring: Outcomes from a research study using data from health/medical credentialling examinations*. Prometric Flyer.

Papers in press or currently under review

Members of CARPE currently have several papers under peer review and in press. These papers include:

Lysaght, Z., O’Leary, M., Scully, C and Mazzone, A. (in press). *Scale development: Identifying and addressing potential validity threats linked with online piloting using paid-for samples*. SAGE Research Methods: Doing Research Online.

Cherry, G., O’Leary, M., Kuan, L., Waters, L. and Naumenko, O. (under review). *Do Outcomes from High-Stakes Examinations Taken in Test Centres and Via Live Remote Proctoring Differ? Computers and Education Open*.

Pitsia, V. and Lysaght, Z. (in press). *High achievement in mathematics and science: A chronology of relevant educational policy findings from large-scale assessments in Ireland, 1995 to the present day*. *Irish Journal of Education*.

Looney, A., O’Leary, M., Scully, D. and Shiel, G. (in press). *Cross-National Achievement Surveys and educational Monitoring in Ireland*. In: Volante, L., Schnepf, S. and Klinger, D. (Eds.). *Cross-National Achievement Surveys for Monitoring Educational Outcomes: Policies, Practices, and Political Reforms within the European Union*. Publications Office of the European Union [ISBN: 978-92-76-22353-5].

Lehane, P., Scully, D. and O’Leary, M. (under review). *‘Time to figure out what to do’: Understanding the nature of Irish post-primary students’ interactions with computer-based exams*. Abstract submitted for consideration to Irish Educational Studies’ special issue entitled ‘Digital Education Futures: Designing for doing education differently’.

Papers in preparation

Lysaght, Z. and Cherry, G. 'Standardised Testing in English Reading and Mathematics in Irish Primary Schools: Trends Over Time'.

Lysaght, Z., O'Leary, M. and Doyle, A. 'Don't ask me what and how I assess: Ask me what I feel and believe about my role as an assessor.'

Scully, D., Carroll, M., Clarke, S. and Guirke, G. 'Aspirational, but not owned by the stakeholders' teachers' perspectives on assessment-led junior cycle reform in Ireland.

Scully, C. and Cherry, G. 'Remote Objective Structured Clinical Examinations (OSCEs): Trends and future directions'.

Cherry, G. 'Rural-urban location and educational attainment outcomes in the context of Northern Ireland'.

Kaya-Capocci, S., O'Leary, M., Brown, M. and Costello, E. 'Towards a Framework to Support the Implementation of Digital Formative Assessment in Higher Education.'

CARPE Events

Research Conversations Series 'Classroom Assessment Literacy'

Awardees of the Institute of Education Research Fellowship took part in a research conversation series, the third of which featured Dr Zita Lysaght in conversation with Professor Michael O'Leary speaking about *Classroom Assessment Literacy*'. This conversation focused on teacher assessment literacy as fundamental to teacher professionalism. Zita and Michael also discussed the findings from two large-scale national research projects on classroom assessment, coupled with insights from the design and provision of professional development over many years. This event proved to be considerably thought-provoking, not least in the context of national curriculum reform. Providing insights into teachers' attitudes to standardised assessment was a key area of discussion during this conversation. Other topics that were discussed included, the implications of assessment literacy for teaching and learning; the knowledge, skills, competences and attitudes teachers need and how these can be addressed. The conversation concluded with a discussion surrounding avenues for further research.



Prometric Lunch and Learn Presentation Series

The Prometric *Thought-Leadership: Lunch and Learn* is a presentation series that has showcased several CARPE research projects to Prometric staff members. This series began in March 2021, with Gemma Cherry kick starting the conversation with a presentation and discussion on “*ProProctor versus Test Centre Exam Performance*”. In this presentation Gemma and colleagues discussed the findings obtained from a study on the comparability of results between live remote proctoring and in-centre delivery modes for insurance programmes. The presentation also covered next steps and future directions of the study.

The presentation series continued in May 2021, with Darina Scully discussing “*3-Option Versus 4-Option Multiple-Choice Items*”. As credentialling organisations continually strive to develop the highest quality items for the examinations, Darina considered whether or not a 3-option multiple-choice item performs as well as a 4-option. Darina also talked about the implications of her study findings for test developers.



Paula Lehane was next to present in this series, in June 2021. Her presentation was titled “*Device Comparability and Candidate Preferences for Computer-Based (CBT) Exams*”. While desktop computers were once the only devices used for online tests, the use of mobile devices (e.g., smartphones, tablets)

has become more common. However, devices with different screen sizes or input mechanisms can cause significant variations in test-taker experience which can potentially impact test-taker performance. Therefore, the comparability of scores produced by test-takers taking the same test on different devices requires greater attention from the testing community. This presentation provided an overview of current research examining online test design and device comparability, drawing on findings from peer-reviewed academic journals alongside technical reports from testing organisations. Paula also discussed the implications for both test developers and researchers.

Following on from Paula, was Conor who presented on “*The Reliability of Objective Structured Clinical Examinations (OSCEs)*” in September 2021. Conor’s presentation focused on the various ways that assessors form judgements about student performance, and the resulting implications for score reliability.

This presentation series is ongoing and will continue into the Autumn of 2021 and into 2022, with presentations by Anastasios Karakolidis currently scheduled to take place.

Quality and Qualifications Ireland Seminar Series

Aligning Assessment, Learning and Teaching for Quality Assurance in Further and Higher Education Contexts, was part of the Quality and Qualifications Ireland



QQI

Quality and Qualifications Ireland
Dearbhú Cáilíochta agus Cáilíochtaí Éireann

blended learning seminars. Michael O’Leary and Zita Lysaght led the conversation which focused on exploring ideas and concepts essential to ensuring the effective alignment of assessment, teaching and learning. In this seminar they posed three questions that they hoped would act as catalysts for future conversations and reflections. These were:

- 1) What does alignment mean in the context of Assessment, Learning and Teaching?
- 2) Why is it important?
- 3) What challenges does alignment present for colleagues involved in programmatic/modular design and/or review based?

Boston College ‘Brown Bag’ Event

During this lunchtime seminar ran by the Department of Measurement, Evaluation, Statistics and Assessment at Boston College, Michael O’Leary provided an overview of CARPE before handing over to his CARPE colleagues who each highlighted some of the research/measurement challenges they have encountered when implementing specific projects over the past five years. These included: scoring situational judgement tests; tracking variables across international studies; communicating about the implications of research on 3 versus 4 options in multiple choice question (MCQ) tests; construct definition when interviews are used as measurement instruments for selection of candidates to teacher education programmes; ensuring data quality when using commercially sourced samples from Qualtrics; and researching assessor cognition in the context of Objective Structured Clinical Examinations (OSCEs). Each presentation was allocated 5-6 minutes and there was a panel discussion at the end of the session.



**BOSTON
COLLEGE**

Announcement of New Prometric Funding

In September 2021, Prometric announced that they were extending their research partnership with CARPE through December 2023. CARPE has been supported by Prometric since the centre was established in 2015. Speaking about the announcement, Prof. Michael O’Leary, the Centre’s Director said:

“I am proud of the strong and strategic partnership we’ve created between expert teams at Prometric and DCU/CARPE over the past six years. I believe that together we are making important contributions and driving a deeper understanding of how assessment can be used for the benefit of all learners in educational and workplace settings”.



Prometric is a global leader in test development, testing delivery, and candidate services. They partner with the world’s top credentialing and licensure organisations to design and deliver leading exam programs that help individuals to advance their careers and to serve their communities. More information about Prometric can be found at: [Prometric.com](https://www.prometric.com)



CARPE in the Media

In 2019-20, CARPE significantly increased its engagement with the wider public on issues related to assessment. In 2020-21 this engagement has continued to increase and CARPE research, particularly the work conducted on the Calculated Grades Process, has featured in numerous media outlets.

In February 2021, Michael O’Leary wrote an [article](#) for the Irish Times where he discussed what could be in store for the Leaving Certificate in 2021 and specifically, “*How to get Leaving Certificate calculated grades right this time*”. In this article Michael focused on four key terms that must be considered as we move forward: Comparability, Coherence, Credibility and Confidentiality.

How to get Leaving Certificate calculated grades right this time

A schools historical performance in the exam must be taken into account

© Mon, Feb 22, 2021, 17:14

Michael O’Leary



Minister for Education Norma Foley T.D. congratulating students Fiona Isdell and Eloise Keogh from Dominican College, Griffith Avenue, Dublin on Leaving Cert Results day 2020. Photo Chris Bellew / Fennell Photography.

Minister for Education, Norma Foley claims that she has delivered clarity and choice for the Leaving Cert class of 2021. The terms clarity and choice (in addition to compassion) have also featured in the public comments of many stakeholders over the past weeks and months. I would now like to highlight four other terms beginning with the letter c that may be worth considering. I will begin with comparability.

Leaving Cert 2020 calculated grades: What lessons should be learned?

Newly revealed documents throw fresh light on effect of decision to omit school profiling

© Mon, Feb 22, 2021, 00:03



Carl O'Brien Education Editor

LISTEN NOW 10:12



Leaving Cert students protesting outside the Department of Education last September over the calculated grades process. File photograph: Dara Mac Dónaill

Michael was then quoted in an [article](#) also published in the Irish Times regarding “*What lessons should be learned*” from the Leaving Certificate 2020 calculated grades process. In this article Michael’s recommendation that the use of school historical data as a useful approach was highlighted. Michael’s thoughts on the challenges involved in aligning outcomes when school historical data is not considered were also noted in this article.

After the [Calculated Grades report](#) was published in April 2021, this research went on to be featured and discussed in both the Irish Times and the Irish Independent newspapers.

Teachers concerned by colleagues' marks for calculated grades

Katherine Donnelly
EDUCATION EDITOR

SOME teachers had concerns about the basis on which colleagues estimated marks for their Leaving Cert students last year, but the vast majority believe they themselves were fair.

A new report also details how some teachers came under pressure from schools to award higher marks, or felt the wrath of parents over the grade awarded.

Calculated grades, based on teachers' marks, were used for the first time in Leaving Cert 2020, after the June exams were cancelled.

More than 700 teachers shared their views on the process in a study by Dublin City University's Institute of Education and its CARPE assessment research centre.

Overall, 92pc of teachers felt they were fair, although 61pc gave 5pc or more of their students the benefit of the doubt with a mark that moved them above a grade boundary.

One in five (21pc) said that they should have awarded a failing mark but didn't, while one third (34pc) awarded a higher mark than they felt the student would have achieved because they thought the national standardisation process might bring the student's grade down.

Overall, 38pc of teachers found it difficult to maintain an unbiased position when marking and a number highlighted the efforts in their school to minimise bias.

However one teacher said a colleague admitted to adding 15pc to all students' marks because that was how he improved in his own exams after the 'mocks'.

Another teacher said there were "grotesque levels of grade inflation in my department, which was not then sufficiently moderated by the Department of Education".

While 87pc of teachers expressed confidence in the professional judgement they exercised, 81pc found the experience stressful, with 73pc uncomfortable about students having access to their class ranking, and 32pc feeling guilty about the marks' rankings they awarded.

According to the report's authors, Audrey Doyle, Zita Lysaght and Michael O'Leary, an overarching theme that emerged was that because Ireland is a small country, calculated grades create unnecessary stress and pressure, particularly in rural and small towns.

One teacher reported difficulties such as when meeting parents out shopping "as some tried to broach the subject of assessment with me, some parents have not spoken to me since as they feel I gave a harsh grade".

Some also pointed to pressure exerted internally by principals and "subtle interference on behalf of management", with one teacher claiming that school integrity was compromised, and others pointing to conflicts of interest.

The publication of DCU's preliminary findings are timely as a version of calculated grades, called accredited grades, are on the table for Leaving Cert 2021, together with an option to sit the June exams.

Some teachers feel pressure from schools, parents to inflate Leaving Cert grades

Vast majority of teachers felt they were fair to students in estimating marks, study says

© about 9 hours ago

Carl O'Brien Education Editor

LISTEN NOW 02:57



The findings are contained in a preliminary survey of more than 700 secondary teachers who were involved in last year's calculated grades process, which required teachers to assess their own pupils for State certification for the first time. Photograph: Nick Bradshaw/Irish Times

THE IRISH TIMES

Tue, May 25, 2021

NEWS SPORT BUSINESS OPINION LIFE & STYLE CULTURE

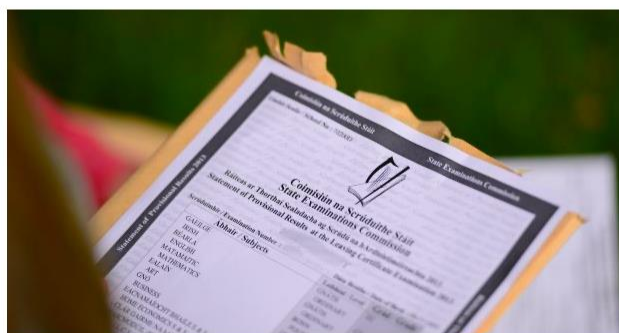
Education > Student Hub | 2nd Level Hub | Parents

Will teachers be tempted to inflate Leaving Cert students' grades this year?

New research raises important questions around how educators will engage with this year's accredited grades model

© about 11 hours ago

Peter McGuire



"There were students last year who genuinely felt that they got a raw deal, mainly because school historical data was not used," says DCU researcher Michael O'Leary. Photograph: Bryan O'Brien

This media coverage continued into May 2021 with an [article](#) published in the Irish Times containing an overview of the Calculated Grades research and the results obtained from it. Focusing on the question of "Will Teachers be tempted to inflate Leaving Cert students' grades this year?" this article provided its readers with a synopsis of the results obtained from the 700 teachers who participated in the CARPE Calculated Grades Survey.

This was the first study of its kind in Ireland and generated a significant amount of discussion on the role of standardised tests in Irish primary schools. Since then, this research has continued to be featured in the media. In June 2021, the results of this research were detailed in an [article](#) published in the Irish Times. In line with this theme, Dr Zita Lysaght, wrote an [opinion piece](#) on standardised testing which featured in the Irish Times.

Opinion: They don't reflect a child's creativity, disposition or work ethic. It's time for reform

© Wed, Jun 2, 2021, 10:48 Updated: Wed, Jun 2, 2021, 12:30

Aoife McCloskey



Expecting children to sit still for long periods of time to complete formal assessments that may not suit their learning style is an antiquated practice in 2021. Photograph: iStock

In September 2021, Michael wrote an opinion piece for the Irish Independent that generated a large amount of interest. This article was titled “*We must make the last count by deciding the role of teachers in assessment*”. The full article is available to read in the appendix on page 54.



Opinion piece about the Leaving Certificate assessment by CARPE Director, Michael O'Leary in today's Irish Independent:
[independent.ie/opinion/commen...](https://www.independent.ie/opinion/commentary/leaving-certificate-assessment-by-carpe-director-michael-oleary-today-s-irish-independent-123456789.html)



CARPE Contributions to the IoE

(i) Research Consultancy Hours

CARPE welcomes all requests for research design and/or data analysis support from IoE staff and students. Since summer 2018, a set of formal guidelines have been in place to ensure this support can be provided in an adequate and timely manner. Specifically, proforma has been put in place on CARPE's [website](#), whereby all requests for support can be made to the Director. Once the nature and extent of the support required has been identified, a member of the CARPE research team is officially appointed to the job. This researcher can spend up to a maximum of two consultation hours per project during the working day, but additional consultations that take place outside of working hours are also possible. This service has been well received, and the CARPE team has received many requests through these channels.

(ii) SPSS Workshops

CARPE are pleased to be able to offer a series of workshops on using SPSS to analyse data from questionnaires. These workshops are aimed at those who are new to SPSS, and cover topics such as data entry and cleaning, and running both descriptive and inferential statistics. These workshops take the form of three two-hour sessions, held regularly throughout the academic year. Feedback from workshop attendees has been overwhelmingly positive.

(iii) Teaching and Supervision

All members of the CARPE team are actively involved in teaching and/or supervision at both undergraduate and postgraduate level within the Institute of Education.

Michael supervises five doctoral students and contributes occasional lectures on the EdD Programme.

Paula contributed to the B.Ed programme helping the School of STEM Education, Innovation and Global Studies to deliver workshops for 1st and 4th Year students on the use of digital tools (e.g., Scratch, Minecraft) in primary schools. Paula was also a Writing Tutor within the DCU Writing Centre since September 2018. As part of her work with the Writing Centre, Paula worked with students on a one-to-one basis as well as providing online and group writing support. She also facilitated academic writing workshops and creates resources on this topic. Conor has also been working with the Writing Centre from September 2020. Paula is now working in the School of Inclusive and Special Education in the Institute of Education, DCU.

CARPE External Engagement

Michael acted as a peer reviewer for *The Journal of Immersion and Content-Based Language Education*, along with Vasiliki. He also acted as a peer reviewer for *Assessment in Education: Principals, Policy and Practice*, along with Gemma. Michael is now a member of the International Congress for School Effectiveness and Improvement (ICSEI) which invites researchers from around the globe to explore and study issues including the short and long-term consequences of COVID-19 on standardised student assessments. Michael is also a member of the newly formed World Education Research Association (WERA) International Research Network on “Research-Informed Education”. This Network was formally approved in May 2021 and is led by Jana Groß Ophoff University of Education Vorarlberg, AT and Chris Brown, Durham University School of Education, UK. Michael will be collaborating on a project investigating the relationship between educators’ reported use of evidence and the benefits, costs, and signifying factors they associate with evidence. In 2020, Michael prepared a video presentation on assessment for the Professional Development Service for Teachers (PDST). This video has since become a central element of the PDST’s assessment webinar and has been shared with the wider inspectorate.

In January 2021, Michael and Gemma attended an online event ran by the ECIU University on micro-credentials. This event focused on short-term developments, longer-term ambitions, and concrete actions in the field of micro-credentials. Throughout this year, Gemma maintained her links with Queen’s University, Belfast and wrote a [blog post](#) about her PhD research for the Small Schools Rural Community research group. This year, Gemma also launched the CARPE Blog section of the website, which has since had contributions from Paula, Conor and Michael. It is hoped that this blog will provide the wider research community with concise information relating to specific CARPE research projects. Gemma also attended a 3-day online professional development course ran by the University of Maryland on Structural Equation Modelling.

Paula delivered guest lectures on the topics of co-teaching, assessment, and individualised planning to practicing teachers on the Postgraduate Diploma in Special Educational Needs in UCD (University College Dublin). She was also a research supervisor for students completing their Professional Masters in Education (PME; post-primary) qualification in UCD.

CARPE Staff Professional Development

Members of CARPE have engaged in numerous professional development opportunities at different points throughout the year. An overview of the courses that CARPE members attended is outlined below.

Since beginning her post-doctoral role in September 2020, Gemma has completed the following courses:

- MS Excel
- Report writing skills
- Social media for non-profits
- How to effectively manage social media
- Introduction to Educational Research Data Analysis: Applications in R
- Data Visualisation
- Mastering confident presentations
- Grant writing and budgets
- Analysing large and complex datasets (University of Maryland)
- Data cleaning with Open Refine
- Introduction to project management
- Systematically searching the literature.

Conor has also engaged in professional development opportunities this year including:

- NVivo Training
- Questionnaire Item Writing.

Over the past year, Paula has engaged in the following professional development courses:

- Metrics for Engagement and Impact
- 21st Century readers: Using process data to understand literacy skills in a digital world.

Appendix 1

We must make the last two years count by deciding the role of teachers in assessment

Michael O'Leary

Irish Independent 9/9/21

Those of us working in education could never have foreseen the crisis brought about by the cancellation of the traditional Leaving Certificate examinations in June 2020 as a result of COVID-19. The fact that post-primary teachers agreed to be directly involved in assessing their own students for certification purposes that year and again in 2021 seems scarcely believable now given their previous opposition to any idea suggesting such an involvement. But has the experience of calculated grades in 2020 and accredited grades in 2021 changed hearts and minds about assessment? Are teachers more or less likely now to consider playing a part in deciding what appears on the certificate students get at the end of their post-primary education? It will take some time for these questions to be addressed fully but findings from a recent online survey of over 700 post-primary teachers involved in the Leaving Certificate (LC) 2020 calculated grades process are worth considering in the interim.

As described in a report on survey (see Doyle, Lysaght & O'Leary, 2021, <https://www.dcu.ie/carpe>), many respondents expressed confidence in their professional judgements with most indicating that they had enough information to reach an informed decision about the most likely mark the majority of their students would have achieved had the examinations gone ahead. While most agreed the process in schools had gone well, decision-making around grade boundaries, reconciling inconsistencies in student performance, maintaining an unbiased position with respect to individual students and the strict application of Department of Education calculated grades guidelines were seen as particular challenges. Many teachers did not hold back when describing the pressure and stress they felt throughout the process. While many were adamant that they would not engage in a calculated grades process in the future, some took a more nuanced view indicating overall satisfaction with the process in the context of exceptional circumstances and highlighting the potential benefits it offered some students.

This latter point in particular is worth highlighting. The teacher unions have been adamant for some time that their members do not wish to be directly involved in state exams, arguing that a system of external marking is fairer to students. However, additional analyses carried out on data from the DCU study (yet to be published) suggest that this may not be how all post-primary teachers see it. In this study, over a third of respondents believed that teacher involvement in assessment for certification purposes would lead to fairer outcomes for the students in their schools. Perhaps even more surprising was the significant minority (almost 30%) who agreed that, as a result of having been involved in the calculated grades process, they felt more positively disposed to being involved directly in assessing their own students for certification purposes. While fully acknowledging the limitations of a study drawing on

data from a sample of a relatively modest size, the findings seem significant in that they point to the possibility that there are voices among the teaching body that have not, heretofore, been heard.

Leaving Certificate assessment has been firmly on the agenda since the National Council for Curriculum and Assessment (NCCA) began its review of Senior Cycle in 2016. Documents detailing the outcomes of the consultation process with teachers, parents and students (see NCCA.ie) reveal an acceptance that the LC examination system and especially the traditional (established) LC needs to be reformed in a way that places less emphasis on the written exams each June and more emphasis on continuous assessment including approaches more apparent in the LC Applied programme (e.g. portfolios) and the spacing out of examinations over the final two years of Senior Cycle. However, the issue of whether or not the grades awarded to a student at the end of post-primary education should be reflective of their teachers' judgements in addition to the outcomes of written examinations and externally marked assignments does not feature. In a recent publication entitled *Education in Ireland: An OECD Assessment of the Senior Cycle Review* (OECD, 2020) it was noted that:

“There is ambivalence in the support that some stakeholders manifest for change, which jeopardises the chance to settle some of the issues acknowledged. Even when convinced of the need for change in senior cycle education, stakeholders tend to disagree on the nature and scope of the change, which makes finding common solutions considerably more challenging.”

Surely now, given everything that's happened in education since the advent of the pandemic, a conversation about solutions involving teachers in state certification examinations must take place? I don't believe anyone will be arguing for a system of calculated/accredited grades where teachers are the sole arbiter of what appears on a student's leaving certificate. International research showing that teachers tend to overestimate their students' performance in exams and the levels of grade inflation witnessed in Ireland in 2020 and 2021 make this a dubious idea in any event. But what about a three pronged approach involving written exams requiring less content coverage/rote learning, school-based assessments utilising a broad range of appropriate assessment methods and moderated teacher judgements? Would that result in a more balanced assessment system – one where teaching, learning and assessment are better aligned in terms of the aims and aspirations of the Senior Cycle programme? Could such a system be designed so that a determination about achievement in cross-curricular areas such as communication, creativity, problem solving, collaboration or global awareness has the same standing on a student's certificate at the end of post-primary education as a grade in, say, physics? There is much to learn from the unprecedented experiences of everyone involved in the past two iterations of the LC. If the conversation about the role of teachers in assessment for certification is shut down, then the pandemic will have resulted in an educational crisis wasted.