

Information Sheet

for Parents/Guardians of Children & Young People Participating in PolyUp and its Impact on the development of TY students' Algebraic and Problem-solving Skills.

Purpose of the Study: PolyUp and its Impact on the development of TY students' Algebraic and Problem-solving Skills is looking at the development of Transition Year (TY) mathematics students' beliefs, attitudes, problem-solving and algebraic skill utilising the PolyUp app. PolyUp is a software application where students all over the world can come together to build and share 3D creations through fun activities underpinned by mathematics, computer science, robotics, data science, sustainable energy and more. It is a novel software that could have particular application in mathematics teaching and learning.

What will the study involve? The study involves collecting data from children aged 16 years, on a number of questions about the effectiveness of the PolyUp application in promoting mathematics attitudes and problem-solving skills. The PolyUp programme will be used for teaching and learning activities during a 6-week period from the 1st February-Easter break '22. We invite your child's participation in a mathematics test and survey to be taken before and after this period which will gather data on their attitudes and beliefs towards mathematics as a subject. In addition, they will be measured on their algebraic and problem-solving skills before and after the period, in order to ascertain the effectiveness of the PolyUp programme. A researcher from our team at UCC will conduct this study in close cooperation and guided by your child's classroom teacher. This approach will form part of the normal everyday mathematics lesson for this period and will not have undue disruption for your child's learning.

Why has your child been asked to take part? Your child has been asked to take part in the research because they attend Glanmire Community College, which was invited and has agreed to participate in "PolyUp and its Impact on the development of TY students' Algebraic and Problem-solving Skills".

Do I or my child have to take part? No, participation is voluntary. You will be asked to sign a [consent form](#) (please click the blue writing to access the link) for yourself and on behalf of your child. Your child will also be asked to sign an assent form. If you do not give permission, your child cannot participate. Both you and your child have to agree to proceed with participating in the study. You and your child have the option of withdrawing from the study, even if you have agreed to participate. Once your child has completed their involvement, they can still withdraw up until the Easter Break '22, after the completion of the project (anticipated project completion date is the 8th April 2022).

Will you and your child's participation in the study be kept confidential? Yes, absolutely! We are collecting data for research purposes only, so we gather only a minimum of personal data (name and email address) to record consent, and it will be stored securely and separately from the survey data collected. Your personal data will be processed and handled in

accordance with European legislation, including the General Data Protection Regulation (EU) 2016/679. Access to personal data will be highly restricted (project researchers only), and no attempt will be made to link personal data to survey responses. Ten years after the completion of the project, your personal data and the research data will be erased. Your and your child's answers to the questions on the survey will be tagged with an anonymous identifier made up of letters and numbers.

What will happen to the information you and your child give? The responses from your child will become part of a securely stored database, along with data from other children. Because the answers that your child gives will be anonymised, there will be no way to tell who provided the information. The research team will use this data for research and reporting purpose only.

What will happen to the results? It is expected that results of this study will be published in an academic journal and on the research team's website; no identifying information will appear in these outlets. After the project has finished, the anonymised data may be made available to other researchers, but only once we have ensured that it is not possible to identify any individual person from it.

What are the possible disadvantages of taking part? We don't envisage any negative consequences for you or your child in taking part.

What if there is a problem? At the end of their participation, we will discuss with the children how they found the experience and how they are feeling. If they feel distressed, we will talk to their teacher. If you have any issues, you should contact the UCC research team (details below). We can provide contact information for support services.

Who has reviewed this study? Approval has been given by the UCC Social Research Ethics Committee, and all members of the research team visiting schools have been Garda vetted.

Any further queries? If you need any further information, you can contact:

Dr. Máire Ní Ríordáin Project PI: maire.niriordain@ucc.ie

Dr. Mark Prendergast Project Co-PI: mark.prendergast@ucc.ie

If you agree to allow your child(ren) to take part in the study, please fill out this [consent form](#). If you have more than one child participating, you will be able to add more than one name in the relevant box.

Le gach dea-ghuí, Máire

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