

## Co-Authorship Form

This form is to accompany the submission of any thesis that contains research reported in co-authored work that has been published, accepted for publication, or submitted for publication. A copy of this form should be included for each co-authored work that is included in the thesis. Completed forms should be included at the front (after the thesis abstract) of each copy of the thesis submitted for examination and library deposit.

***This form should be completed by a co-author, not by the student.***

Please indicate the chapter/section/pages of this thesis that are extracted from co-authored work and provide details of the publication or submission:

The conference paper titled "**Towards a Virtual Reality Maths Game for Learning In Schools - A User Study**" has played a pivotal role in shaping **Chapter 2** (Background) of this PhD thesis, influencing **every section within it**. Additionally, it influences **Section 4.4** in **Chapter 4** (Methodology). Furthermore, its impact extends to **Chapter 5**, where it significantly informs the game design process, particularly in **Section 5.1**, which deals with requirements and elements, and **Section 5.3**, which deals with the game conceptualization and prototyping. Moreover, **Sections 6.2, 6.3, 6.5, 6.6, and 6.7** in **Chapter 6** find their foundation in the paper.

*Reference: Belter, M., & Lukosch, H. (2022, March). Towards a Virtual Reality Maths Game for Learning In Schools-A User Study. In 2022 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW) (pp. 808-809). IEEE.*

Please detail the nature and extent (as a percentage) of contribution by the student: Meike designed and executed the user study that this paper reports on. She collected and processed all data. The co-author provided feedback on the user study design, the data processing, and provided feedback during the writing process. Meike presented this work at the online conference. Meike's work on this publication was 90%.

### Certification by Co-authors:

If there is more than one co-author then a single co-author can sign on behalf of all

The undersigned certifies that:

- The above statement correctly reflects the nature and extent of the student's contribution to this co-authored work
- In cases where the student was the lead author of the co-authored work, they wrote the text

Name: Heide Lukosch Signature: *Heide Lukosch* Date: 23/08/2023



**Te Kura Tāura  
Graduate School**