

## 2 PhD researchers in instructional psychology and technology

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The Faculty of Psychology and Educational Sciences @ KU Leuven-Kulak (short: PPW@kulak) houses a lot of researchers (PhDs, postdocs, PIs) within the broader topic of Education, Learning and the Brain. Bert Reynvoet & Fien Depaepe both have a background in mathematics learning and this research project brings in complementary expertise from the domains of cognitive psychology and educational technology. PPW@kulak is also strongly intertwined with itec which is a research group of KU Leuven and imec, Flanders' high-tech research and innovation hub for nanoelectronics and digital technologies. At the Kulak campus of KU Leuven, itec conducts interdisciplinary research on the design, development, and evaluation of personalized and adaptive digital solutions, with applications mostly in the domain of technology-enhanced educational and training, but also in media and in health.

[https://kulak.kuleuven.be/nl/over\\_kulak/faculteiten/ppw](https://kulak.kuleuven.be/nl/over_kulak/faculteiten/ppw)

### Project

For many school children, mathematics is a source of frustration because of the experienced difficulties with it. This led to increased research on the underlying cognitive processes of different mathematics skills and at the same time, research on personalized learning approaches to foster particular math skills. However, both research traditions are often too little geared to one another.

In this project, we focus on numerosity and fraction comparison, both important precursors for math and affected by domain-specific and domain-general processes, that is, processes involved in many other – also non-mathematical – skills like inhibition.

First, we will examine whether there are different profiles of children that excel or underperform on one or both (domain-specific and domain-general) dimensions. Second, we will construct adaptive diagnostical tests, that is a test in which the problems are adapted to the child in real time, taking into account both domain-specific and domain-general dimensions. Third, we will evaluate whether children learn better when they are presented with exercises matched to their current ability on both dimensions.

You will be responsible for designing and conducting the research and analyzing the results, with a high focus on quantitative data analysis. You will carry out your research within the faculty of Psychology and Educational Sciences at campus Kulak in Kortrijk. Your research is fundamental in nature with a strong emphasis on theory building. You will publish in scientific journals and present the results of your research at international conferences. You write a PhD dissertation on this topic. You will be supervised by prof. dr. Bert Reynvoet and prof. dr. Fien Depaepe.

### Profile

- You have a Master's degree in educational sciences, psychology, computer sciences, biomedical sciences, speech-language pathology and audiology sciences or a related discipline but with an emphasis on educational and behavioral research.
- You have distinguished yourself during your study career.
- You have a special interest in mathematics learning and the use of technology and ICT in education.
- You are interested in the use of statistical and computer sciences' techniques, as well as in the use of innovative data collection techniques.
- You are creative and result-oriented.
- You are able to work both independently and in an international team.
- You have a very good command of English (oral and written), and preferably also of Dutch.

We kindly ask the candidates to include a short motivation letter in addition to a more detailed CV in which they express their interest in this vacancy.

### Offer

The study will lead to a PhD degree in Educational Sciences or Psychology from the KU Leuven.

As a PhD student, you will have every opportunity to develop yourself further in your professional career, by studying literature, attending seminars and workshops, participating in international conferences and interacting with leading researchers from multiple disciplines. The position offers flexibility and the opportunity to work in an enthusiastic team in a stimulating multicultural environment. In addition, you will become part of (and contribute to) a network of academic and non-academic partners in the flourishing market of educational technology.

Your research will contribute to fast developments in education that have a high societal impact.

We offer a full-time appointment (initially for 1 year, but conditional on a positive evaluation extended to 4 years).

Your workplace is primarily located at the KU Leuven campus Kulak in Kortrijk.

In addition to a competitive salary, KU Leuven offers a number of additional advantages, such as the possibility of flexible working, hospitalization insurance, eco-vouchers, reimbursement for commuting by public transport, inexpensive meals, a KU Leuven bicycle, etc. The candidate can start from September or October 2023 onwards.

After a positive evaluation of your candidacy, the selection procedure will start with an initial interview which will take place on the 3th or 5th of July.

Prior to the interview you will be asked to complete a short assignment in which you will have to present your master thesis on the day of the interview.

[Website Itec](#)

[Website Numerical Cognition Lab](#)

### Interested?

For more information please contact Prof. dr. Bert Reynvoet, tel.: +32 56 24 61 77, mail: bert.reynvoet@kuleuven.be or Prof. dr. Fien Depaepe, tel.: +32 56 24 60 75, mail: fien.depaepe@kuleuven.be.

You can apply for this job no later than June 28, 2023 via the online application tool :

<http://www.kuleuven.be/eapplyingforjobs/light/60223933>

KU Leuven seeks to foster an environment where all talents can flourish, regardless of gender, age, cultural background, nationality or impairments. If you have any questions relating to accessibility or support, please contact us at [diversiteit.HR@kuleuven.be](mailto:diversiteit.HR@kuleuven.be).