

Juliette Désiron

Post-doc in Education Sciences at IFE, University of Zürich, Switzerland.

Born: May 3rd, 1989
Citizenship: Swiss, French
Family status: Married, three children

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Education

June 2015 - September 2020

PhD in Education Sciences – *University of Geneva, Switzerland*

Thesis: Designing multimedia documents for struggling readers: Effects of text cohesion with static or animated depictions

Advisor: Mireille Bétrancourt, *TEFA, FPSE, University of Geneva*

Co-advisor: Erica de Vries, *LaRAC, Univ Grenoble Alpes*

Funding: SNSF Doc.ch

August 2014

Dual Master Degree: International Cognitive Visualization

Master of Arts in Interdisciplinary Studies (with distinction) – *California State University, Chico, USA*

Master in Education Sciences – *University Grenoble Alpes, France*

Thesis: The influence of graphic-text correspondence and text coherence on children's reading comprehension and attitude toward reading

June 2012

Bachelor in Education Sciences – *University Grenoble Alpes, France*

Academic employment history

February 2023 – December 2023

Post-doc researcher – 20%

University of Zürich, IFE, Chair of Educational Technology

April 2022 – December 2022

Post-doc researcher (with teaching duties) – 25%

University of Zürich, IFE, Chair of Educational Technology

December 2020 – ongoing

Post-doc researcher (with teaching duties) – 70%

University of Zürich, IFE, Chair of Teaching and Educational Technology

July 2021 – October 2021

Post-doc researcher – 30%

University of Geneva, TECFA

October 2020 – April 2021

Post-doc researcher (with teaching duties) – 30%

University of Geneva, TECFA

March 2016 – September 2020

Teaching assistant – 30%

University of Geneva, TECFA

March 2016 – August 2020

SNSF Doc.ch Phd candidate – 70%

University of Geneva, TECFA

Mai 2015 – February 2016

Teaching assistant – 70%

University of Geneva, TECFA

Teaching and students supervision activity

Teaching in Bachelor and Master degree

University of Zürich, IFE

Teaching in the digital era (3 ECTS, spring 2022, spring 2023)

Public: 20-25 students, mainly in teacher education

Objectives: Raising awareness on factors affecting digital technologies integration and presentation of devices tested in experimental studies

Format: project-based approach, carried out in groups of 2-3 students (weekly)

Videos in the classroom: How to use and design them to support learning? (3 ECTS, autumn 2022)

Public: 20-25 students, mainly in teacher education

Objectives: Introducing principles of multimedia learning and how to implement them in videos

Format: project-based approach, carried out individually (weekly)

University of Geneva, TECFA

(Postdoc) Research methods in educational technologies (Master): module on experimental design (2 ECTS, autumn 2021)

Public: 17 master students (mandatory course in the MALTT degree)

Objectives: Introducing bases for experimental research in educational psychology and statistical analyses of variance

Format: project-based approach, carried out in groups of 2-3 students (blended)

(TA) Research methods in educational technologies: in 3 modules (6 ECTS, 2015 - 2020)

Public: 15-25 master students (mandatory course in the MALTT degree)

Objectives: Introducing bases for interview, survey and experimental design for research in educational psychology and corresponding qualitative and statistical analyses

Format: project-based approach, carried out in groups of 2-5 students (blended)

Teaching responsibilities:

- Assisted to or prepared course content
- Managed LMS (Moodle, LAMS)
- Delivered 1 lecture per year (3 hours)
- Graded papers
- Provided feedbacks to students
- Managed grades entry and computed final grade

(TA) Usability of Human-Computer interaction (3 ECTS, Autumn 2015)

Public: 50-85 bachelor students in psychology or education sciences

Objectives: Raising awareness on the concepts and methods in web-design ergonomics

Format: project-based approach, carried out in groups of 2-3 students (weekly)

Teaching responsibilities:

- Assisted to preparation of course content
- Managed LMS (Moodle)
- Delivered 1 lecture (2 hours)
- Graded papers
- Provided feedbacks to students

Students supervision and mentoring

PhD student co-supervision (*ongoing*)

Sandra La Torre, *TECFA, University of Geneva*

Research area: Appropriation of video media by teachers: Enacting multimedia principles to support students' learning

Co-supervision with M. Bétrancourt

PhD students mentoring (*ongoing*)

Tessa Consoli, *IFE, University of Zürich*

Research area: Technology integration in schools, a student perspective

Lydie Boufflers, *TECFA, University of Geneva*

Research area: Appropriation of digital design and making technologies by in-service teachers

Julien Venni, *TECFA, University of Geneva*

Research area: Emotional design of online learning materials

Master students co-supervision

Lorain Freléchoux (*ongoing*), *MALTT, University of Geneva*

Project: Développement de vidéos interactives pour l'acquisition de compétences numériques, et analyses des effets

Co-supervision with G. Ortoleva

Sandra La Torre (2022), *MALTT, University of Geneva*

Dissertation : La théorie cognitive de l'apprentissage multimédia en contexte authentique : Le cas des vidéos pédagogiques

Florian Ribon (2021), *MALTT, University of Geneva*

Dissertation : Quelles habiletés visuo-spatiales pour quel type de jeu ?

Co-supervision with M. Bétrancourt and S. Estupiñan

Julien Venni (2017), *MALTT, University of Geneva*

Dissertation : Étude de l'effet de l'esthétique sur l'utilisabilité d'une interface lors d'une tâche de recherche d'informations sur un site Internet.

Co-supervision with M. Bétrancourt

Research activity

December 2020 – *ongoing*

University of Zürich – Institute of Education, Switzerland

Post-doc research

- Large scales assessments: Effects of technologies on homework (with D. Petko)

Multilevel analysis of factors of digital academic cheating in secondary education based on data from 2018 PISA questionnaires. An article has been published.

Based on these results we then analysed how homework engagement contribute to the use of digital technologies at home for school related activities. An article is in preparation.

- VR trainer in hand hygiene (with A. Wolfensberger, L. Clack and D. Petko)

The objective of this experimental research is to determine factors related to digital technology acceptance influencing hand hygiene training in an immersive virtual environment. An article with results from a first experiment has been published, and a second and third experiments have been conducted with articles in preparation.

- Signaling: a multifaceted design principle (with S. Schneider)

In a series of experimental studies, the implementation of signaling to support comprehension is tested. Two data collections are completed and corresponding papers are in preparation. A third experiment will take place in the spring 2023.

- Multimedia principles and teachers' practices (independent project)

Within the framework of D. Petko and colleagues DTSII project (funded by the SNSF), we assessed teachers' alignment with multimedia principles in video in correspondence with their beliefs toward technologies, an article has been submitted.

In parallel, together with my master student S. La Torre, we collected videos used by secondary school teachers in class and conducted quantitative and qualitative analyses on the correspondence and infractions with multimedia principles.

Future steps in this project is to implement long term awareness of teachers by working with them in creating and testing videos to use in their classrooms. A first study is ongoing with data analyses from pre-service teachers who were enrolled in the autumn 2022 seminar on *Videos in the classroom*.

September 2015 – September 2020

TECFA, University of Geneva, Switzerland

Doctoral research

Thesis: Designing multimedia documents for struggling readers: Effects of text cohesion with static or animated depictions

During my PhD I developed three experimental designs and conducted five studies, three in upper secondary vocational school, one in laboratory condition with eye-tracking data collection, and one online through the platform Prolific. The experimental materials were designed together with the French teachers taking part in the studies with their students, and presented to those as class activities using tablets. I conducted quantitative analyses and qualitative coding of open-answers as well as drawings. This thesis contributed to the elaboration of practical design recommendations.

October 2014 – August 2015

TECFA, University of Geneva, Switzerland

Research Collaborator, project: Spatial Cognitive Trainer

Supervisors: Prof. Rosita Haddad and Dr. Sandra Berney

In this project I contributed to the design of two experimental studies and conducted data collection for that including measures of eye-tracking and transfer task with tangible shapes. I redacted a report of experiment as well, and reviewed conference submissions on these two studies.

August 2013 - July 2014

California State University, Chico, United States

Research for Master Thesis

Dissertation: The influence of graphic-text correspondence and text coherence on children's reading comprehension and attitude toward reading

Supervisors: Dr. Neil H. Schwartz, Prof. Erica de Vries

During my master I conducted research in collaboration with the publisher XXX with the aim to determine how to adapt their young literature book collection to learners with reading comprehension difficulties. Thus, I designed the experimental material by manipulating abstract of existing books. To test the effect of cohesion and graphic-text correspondence, I worked together with 3 teachers (and 2 grade levels) in school, where data collection was presented to pupils as two class activities (one week apart). To limit the effect of foreign accent, I worked in collaboration with bachelor students during data collection. I computed analyses of variances under the supervision of my mentors.

February 2013 - July 2013

University Grenoble Alpes and Xerox (Meylan), France

Exploratory Research in collaboration with the company Xerox

Dissertation: Representing the Results and Progress of Pupils for Teachers

Supervisors: Prof. Erica de Vries, Dr Robert Rolleston

In this research project, initiated by the company Xerox, I studied the visual representations that could be used to support teachers' communication of pupils results with their parents. To this end I built several representations and which I integrated to an online survey to the attention of teachers, followed up by five semi-guided interviews. Data analyses included descriptive statistics and qualitative analyses.

Administrative activity

Mai 2015 – October 2021

TECFA, University of Geneva, Switzerland

- Website

Maintenance of the team and individual webpages.

2016-2017: Project manager for the redesign of the unit TECFA website, based on an ergonomic analysis

- Master MALTT

In charge of semester teaching evaluations (preparation, data collection and report).

In charge of annual calendar setting (set up in class periods for both years based on faculty calendar).

Involvement in the organisation of the yearly presentation to bachelor students.

Organisation of the survey and report on students' preferences for dissertation topics and advisors.

Third party funding

Competitive grants

March 2016 – September 2020

| *Swiss National Science Foundation*

| CHF 239'608

Doc.ch funding to conduct doctoral research, sole applicant.

Other grants

August 2015

| *Société Académique de Genève*

| CHF 600

Grant to attend the EARLI 2015 conference in Limassol (CYPRUS), sole applicant.

August 2013 – July 2014

| *Atlantis*

| € 12'000

Grant to study (Master) abroad in Chico, CA (UNITED-STATES), sole applicant.

August 2013 – July 2014

| *Explo'ra*

| € 3'420

Grant to study (Master) abroad in Chico, CA (UNITED-STATES), sole applicant.

August 2012 – January 2013

| *Erasmus*

| € 2'100

Grant to study (Master) abroad in Landau (GERMANY), sole applicant.

August 2012 – January 2013

| *Explo'ra*

| € 1'710

Grant to study (Master) abroad in Landau (GERMANY), sole applicant.

Memberships and review activity

Active member of EARLI since 2014 (SIG 2 and 6-7)

- JJunior REsearcher Coordinator, SIG 2: Comprehension of text and graphics (2015-2017)

Active member of AERA in 2014, 2015 and 2020

Reviewer for EARLI conferences and EARLI SIG 2 meetings since 2015

Reviewer for *Learning and Instruction* (1), *Instructional Science* (1), *British Journal of Educational Psychology* (2), *Education and Information Technologies* (2), *Frontiers in Education* (1)

Conference and symposium organization

August 2022 – Symposium organization

| European Association for Research in Learning and Instruction, SIG 6-7 – Zollikofen (SWITZERLAND)
Symposium: Immersive technologies: another perspective on training (Désiron, J.)

June 2018 – Conference organization

| European Association for Research in Learning and Instruction SIG 2: Comprehension of text and graphics – Freiburg (Germany)

Conference: Forest before trees: Towards identifying general patterns in text and graphics research

Organizers: Eitel, A., Bétrancourt, M., Lehmann, J. and **Désiron, J.**

August 2017 – Symposium organization

| European Association for Research in Learning and Instruction – Tampere (Finland)

Symposium: Learning with Dynamic media in formal and informal contexts

Organizers: Bétrancourt, M. and **Désiron, J.**

July 2016 – Conference organization

| European Association for Research in Learning and Instruction SIG 2: Comprehension of text and graphics – Geneva (Switzerland)

Conference: Learning from Text and Graphics in a World of Diversity

Organizers: Bétrancourt, M., Berney, S., **Désiron, J.** and Tabbers, H.

Outreach activities

March 2023

| Institutional even open to the public: *DKS day: 42 ans de techno educ, et après ?* – Geneva

Serie of scientific events open to the public around the career of Prof Daniel K. Schneider with Making technologies demonstrations, Round table and Leçon d'Adieu

Organizers: Bétrancourt, M., Ortoleva, G., **Désiron, J.**, Sutter-Widmer, D., Boufflers, L., Benetos K. and Estupiñan, S.
Attendees: about 100

September 2021

| HSGYM, 10. Herbsttagung *Alles anders?* – Uster

Barcamp with D. Petko “*Digitale Hausaufgaben: Potenziale und Herausforderungen – Wer macht noch Hausaufgaben (seit es Copy & Paste gibt)?*”

Attendees: about 25

September 2021

| Colloquium *Les supports composites : Comment ça marche ?* - Geneva

Invited speaker “*Utiliser des liens inter-représentations pour faciliter la compréhension de textes illustrés*”

Attendees: about 60

March 2020

| Research report for teachers

Report on the research activity and results from a study with 148 first year students in secondary school (ECG) in Autumn 2018, as part of my doctoral research.

Octobre 2019, 2021

| Fête de la Science (Arbusigny, FR)

Posters on 1) How eye movements inform on visual processing, entitled: “*Attention: Ce que disent vos yeux*” and 2) results of an experimental study on processing of a text-picture document, from eye-tracking data.

October 2018

| Research report and presentation for teachers

Report on the research activity and results from a study with 95 first year students in secondary school (ECG) in Spring 2017, as part of my doctoral research. Additionally, the report was the subject of a presentation open to all teachers at the participating school.

September 2016

| Research report for teachers

Report on the research activity and results from a study with 54 first year students in secondary school (ECG) in Spring 2016, as part of my doctoral research.

Contributions to international conferences

August 2023

| European Association for Research in Learning and Instruction, Thessaloniki (GREECE)

Multimedia principles in instructional videos for classroom: A case study with pre-service teachers —

Poster

Try to contaminate patients and objects”: Effects of discovery instructions in VR — Poster

September 2022

| Swiss Society for Research in Education, Lausanne (SWITZERLAND)

Homework avoidance in the 21st century: What predicts Swiss students digital cheating?

| Actualité de la Recherche en Education et en Formation, Lausanne (SWITZERLAND)

Liens entre l’alignement des enseignants avec les principes multimédias et compétence perçue dans l’utilisation des technologies.

| Swiss Psychological Society, Zürich (SWITZERLAND)

Do videos used in class follow Multimedia principles?

August 2022

| European Association for Research in Learning and Instruction – SIG 2, Kiel (GERMANY)

Videos in the classroom: Do they actually come with signalling (and other multimedia principles)? — Poster
Beyond the effect size: Can visualizations from emotional design really be compared? (co-author) — Poster

| European Association for Research in Learning and Instruction – SIG 6-7, Zollikofen (SWITZERLAND)

Learning with text and pictures: Effects of cohesion and cross-representational signaling.

August 2020

| European Association for Research in Learning and Instruction – SIG 2, Prague, (CZECH REPUBLIC)

Struggling readers benefit from text with animation if it comprises cross representational signaling

April 2020

| American Education Research Association, San Francisco, CA (UNITED-STATES)

Struggling readers learn better from text and animation with signals than from text alone

<http://tinyurl.com/qgsk98y> – Conference canceled (COVID-19)

August 2019

| European Association for Research in Learning and Instruction, Aachen (GERMANY)

Cross-representational signaling fosters text-picture integration: evidence from eye movements - Presented by: Erica de Vries

August 2018

| European Association for Research in Learning and Instruction – SIG 2, Freiburg (GERMANY)

Learning with text and pictures: Effects of cohesion and cross-representational signaling.

June 2018

| International Conference on the Theory and Application of Diagrams, Edinburgh (SCOTLAND)

How Cross-Representational Signaling Affects Learning from Text and Picture: An Eye-Tracking Study. — Poster

August 2017

| European Association for Research in Learning and Instruction, Tampere (FINLAND)

Four reading ability tests as predictors of multimedia document comprehension.

July 2016

| European Association for Research in Learning and Instruction – SIG 2, Geneva (SWITZERLAND)

Comprehending Text-Graphic Combinations: Text Coherence and Level of Graphical Detail — Poster

August 2015

| European Association for Research in Learning and Instruction, Limassol (CYPRUS)

Comprehending Text-Graphic Combinations: Text Coherence and Level of Graphical Detail

April 2015

| American Education Research Association, Chicago, IL (UNITED-STATES)

The Influence of Text Coherence and Text-Graphic Correspondence on Children's Comprehension - Presented by: Erica de Vries

March 2014

| National Consortium for Instruction and Cognition, Philadelphia, PA (UNITED-STATES)

The Influence of Graphic-Text Correspondence and Text Coherence on Comprehension and Attitude Toward Reading — Poster

Publications

Publications in peer reviewed journals

Consoli, T., **Désiron, J.**, & Cattaneo, A. (2023). What is “technology integration” and how is it measured in K-12 education? A systematic review of survey instruments from 2010 to 2021. *Computers & Education* (Vol. 197). DOI: [10.1016/j.compedu.2023.104742](https://doi.org/10.1016/j.compedu.2023.104742)

Désiron J. C., Petko D. (2023). Academic dishonesty when doing homework: How digital technologies are put to bad use in secondary schools. *Educ Inf Technol*, 28, 1251-1271. DOI: [10.1007/s10639-022-11225-y](https://doi.org/10.1007/s10639-022-11225-y)

Désiron, J.C., Petko, D., Lapaire, V. et al. (2022) Using virtual reality to train infection prevention: what predicts performance and behavioral intention?. *Virtual Reality*. DOI: [10.1007/s10055-022-00708-5](https://doi.org/10.1007/s10055-022-00708-5)

Désiron J.C., Bétrancourt M., de Vries E. (2021). Learning from text and animations: a study into the need for cross-representational signaling. *L'Année Psychologique* 2021/4 (Vol. 121), p. 393-416. DOI: [10.3917/anpsy1.214.0393](https://doi.org/10.3917/anpsy1.214.0393)

Désiron J. C., Bétrancourt M., de Vries E. (2021). Cross-Representational Signaling and cohesion support inferential comprehension of text-picture documents. *Front. Psychol.* 11:592509. DOI: [10.3389/fpsyg.2020.592509](https://doi.org/10.3389/fpsyg.2020.592509)

Class B., Schneider D., Ahmadova L., Alidjinou N., Artamonova A., Banaru L., Bebbouchi D., BenMosbah A., Boufflers L., Chokri F., Clément L., Desarzens A.-S., **Désiron J.**, Devincent N., Diop M., Droux J., Giarrizzo A., Gomez A., Guemadji-Gbedemah T. E., Le Coultre R., Linh Quang S., Manzoni A., Marano M., Maret B., Maurin J., Ngatchui Leumbe C., Nya L., Perrier S., Petermann R., Romero C., Schmidt K., Sekle D., Theubet A., Venni J., Waeg S. (2017). Pistes réflexives sur l'apprentissage de la méthodologie de la recherche en technologie éducative *frantice.net* Numéro spécial 12-13, décembre 2016. [[Open Access](#)]

Désiron J.C., de Vries E., Bartel A., Varahamurti N. (2017). The influence of text cohesion and picture detail on young readers' knowledge of science topics. *British Journal of Educational Psychology*. 88(3), 465-479. DOI: [10.1111/bjep.12195](https://doi.org/10.1111/bjep.12195)

Peer-reviewed conference proceedings

Désiron J.C., Bétrancourt M., de Vries E. (2018). How Cross-Representational Signaling Affects Learning from Text and Picture: An Eye-Tracking Study. *International Conference on Theory and Application of Diagrams* (pp. 725-728). Springer, Cham. DOI: [10.1007/978-3-319-91376-6_68](https://doi.org/10.1007/978-3-319-91376-6_68) [[Open Access](#)]

Manuscripts and chapters submitted

Désiron J.C., Bétrancourt M. (*in press*) « Une image vaut 1000 mots » : en formation à distance, il faut privilégier les médias visuels par rapport au texte. In E. Sanchez & E. Paukovics (Eds.) *Mythes et réalités : Apprendre à distance*. Retz

Désiron J. C., Schmitz, M., Petko D. (*submitted*) Creating digital multimedia: Teachers rely on their knowledge of technology rather than on their knowledge about multimedia design

Personal skills

Languages

- French – Native Language
- English – C2, Fluent in reading, writing and speaking
- German– A2-B1, Good knowledge

Digital competences

- Office: Microsoft Office, SPSS, Jamovi
- Computer Graphics: Photoshop, Animate, Affinity suite
- Tobii Studio
- Atlas.ti
- HTML

Career breaks

March – July 2017
Maternity leave

August – December 2019
Maternity leave

March – July 2021
Maternity leave