



# LEARNING AND INSTRUCTION

The Journal of the [European Association for Research on Learning and Instruction \(EARLI\)](#)

## AUTHOR INFORMATION PACK

### TABLE OF CONTENTS

---

●	<b>Description</b>	<b>p.1</b>
●	<b>Audience</b>	<b>p.1</b>
●	<b>Impact Factor</b>	<b>p.1</b>
●	<b>Abstracting and Indexing</b>	<b>p.2</b>
●	<b>Editorial Board</b>	<b>p.2</b>
●	<b>Guide for Authors</b>	<b>p.4</b>



ISSN: 0959-4752

### DESCRIPTION

---

As an international, multi-disciplinary, peer-refereed journal, *Learning and Instruction* provides a platform for the publication of the most advanced scientific research in the areas of **learning, development, instruction** and **teaching**. The journal welcomes original empirical investigations. The papers may represent a variety of theoretical perspectives and different methodological approaches. They may refer to any age level, from infants to adults and to a diversity of learning and instructional settings, from laboratory experiments to field studies. The major criteria in the review and the selection process concern the significance of the contribution to the area of learning and instruction, and the rigor of the study.

#### Benefits to authors

We also provide many author benefits, such as free PDFs, a liberal copyright policy, special discounts on Elsevier publications and much more. Please click here for more information on our [author services](#).

Please see our [Guide for Authors](#) for information on article submission. If you require any further information or help, please visit our [Support Center](#)

### AUDIENCE

---

Educational psychologists, developmental psychologists, cognitive psychologists, educational researchers.

### IMPACT FACTOR

---

2019: 3.323 © Clarivate Analytics Journal Citation Reports 2020

## ABSTRACTING AND INDEXING

---

Current Contents  
PsycINFO  
Australian Educational Index  
ERIC  
UnCover  
Social SciSearch  
Arts & Humanities Search  
British Education Index  
Contents Pages in Education  
Educational Management Abstracts  
ERA (Educational Research Abstracts Online)  
Education Technology Abstracts  
Multicultural Education Abstracts  
Research into Higher Education Abstracts  
Sociology of Education Abstracts  
Technical Education & Training Abstracts  
Education Research Index  
Periodicals Index Online  
Scopus  
Social Sciences Citation Index  
MathEduc

## EDITORIAL BOARD

---

### *Editor-in-Chief*

**Lars-Erik Malmberg**, University of Oxford, United Kingdom

### *Associate Editors*

**Fani Lauermann**, TU Dortmund University, Dortmund, Germany

**Tim Mainhard**, Utrecht University, Utrecht, Netherlands

**Danielle McNamara**, Arizona State University, Tempe, United States

**Jan Retelsdorf**, University of Hamburg, Hamburg, Germany

**Gert Rijlaarsdam**, University of Amsterdam, Amsterdam, Netherlands

**Stefan Ufer**, Ludwig Maximilians University Munich, Munich, Germany

**Erica de Vries**, University Grenoble Alpes, Grenoble, France

### *International Editorial Advisory Board*

**Shaaron Ainsworth**, University of Nottingham, United Kingdom

**Vincent Alevan**, Carnegie Mellon University, United States of America

**Patricia Alexander**, University of Maryland at College Park, United States

**Gianmarco Altoè**, University of Cagliari, Italy

**Katrin Arens**, DIPF | Leibniz Institute for Research and Information in Education, Germany

**Lisa Bardach**, Eberhard Karls University Tübingen, Germany

**Henrik Bellhäuser**, Johannes Gutenberg University, Germany

**Mireille Betrancourt**, University of Geneva, Switzerland

**Pietro Boscolo**, University of Padua, Italy

**Ivar Bråten**, University of Oslo, Norway

**Anne Britt**, Northern Illinois University, United States

**Rainer Bromme**, University of Münster, Germany

**Anique de Bruin**, Maastricht University, Netherlands

**Carol Chan**, University of Hong Kong, China

**Boby Ho-Hong Ching**, University of Macau, Macao

**Kevin Kien Hoa Chung**, The Education University of Hong Kong, Hong Kong

**Kai Cortina**, University of Michigan, United States

**Jennifer Cromley**, University of Illinois at Urbana-Champaign Department of Educational Psychology, United States

**Benő Csapó**, University of Szeged, Hungary

**Theresa DeBacker**, University of Oklahoma, United States of America

**Bram De Wever**, Ghent University, Belgium

**Irene-Anna Diakidoy**, University of Cyprus, Cyprus

**Filip Dochy**, KU Leuven, Belgium

**Julie Dockrell**, University College London Institute of Education, United Kingdom  
**Anastasia Efklides**, Aristotle University of Thessaloniki, Greece  
**Frank Fischer**, Ludwig Maximilians University Munich, Germany  
**Barbara Flunger**, Utrecht University, Utrecht, Netherlands  
**David Galbraith**, University of Southampton, United Kingdom  
**Tamara van Gog**, Utrecht University, Netherlands  
**Thomas Götz**, University of Vienna, Austria  
**Jenefer Husman**, Arizona State University, United States  
**Ton de Jong**, University of Twente, Netherlands  
**Slava Kalyuga**, University of New South Wales, Australia  
**Stuart Karabenick**, University of Michigan, United States  
**Panayiota Kendeou**, University of Minnesota, United States  
**John Kirby**, Queen's University, Canada  
**Noona Kiuru**, University of Jyväskylä, Finland  
**Mareike Kunter**, Goethe University Frankfurt, Germany  
**Erno Lehtinen**, University of Turku, Finland  
**Margarita Limon**, Autonomous University of Madrid, Spain  
**Kirsti Lonka**, University of Helsinki, Finland  
**Marko Lüftenegger**, University of Vienna, Austria  
**Scott Marley**, Arizona State University, United States  
**Richard Mayer**, University of California Santa Barbara, United States  
**Matthew McCrudden**, Pennsylvania State University, United States of America  
**Hans van der Meij**, University of Twente, Netherlands  
**Jeroen van Merriënboer**, Maastricht University, Netherlands  
**Nicolas Michinov**, Rennes 2 University, France  
**Susanne Narciss**, TU Dresden, Germany  
**Markku Niemivirta**, University of Helsinki, Finland  
**Lorena Ortega**, University of Chile, Chile  
**Philip Parker**, Australian Catholic University, Australia  
**Thea Peetsma**, Kohnstamm Institute, Netherlands  
**Janneke van de Pol**, Utrecht University, Netherlands  
**Anna-Katharina Praetorius**, University of Zurich, Switzerland  
**Tobias Richter**, University of Würzburg, Germany  
**Nikol Rummel**, Ruhr University Bochum, Germany  
**Katharina Scheiter**, Leibniz-Institute for Knowledge Media, Germany  
**Bernhard Schmitz**, Darmstadt University of Technology, Germany  
**Tina Seufert**, Ulm University, Germany  
**Gale Sinatra**, University of Southern California, United States  
**Ricarda Steinmayr**, TU Dortmund University, Germany  
**Elsbeth Stern**, ETH Zurich, Switzerland  
**John R. Surber**, University of Wisconsin-Milwaukee, United States of America  
**Huib Tabbers**, Erasmus University Rotterdam, Netherlands  
**Isabelle Tapiero**, National Centre for Scientific Research, France  
**Ulrich Trautwein**, Eberhard Karls University Tübingen Center for Bioinformatics Tübingen, Germany  
**Hilde Van Keer**, Ghent University, Belgium  
**Peggy Van Meter**, Pennsylvania State University, United States of America  
**Elke Van Steendam**, KU Leuven, Belgium  
**Maarten Vansteenkiste**, Ghent University, Belgium  
**Marja Vauras**, University of Turku, Finland  
**Jan Vermunt**, Eindhoven University of Technology, Eindhoven School of Education, Netherlands  
**Lieven Verschaffel**, KU Leuven Centre for Instructional Psychology and Technology, Belgium  
**Eduardo Vidal-Abarca**, University of Valencia, Spain  
**Simone Volet**, Murdoch University, Australia  
**Michael Weinstock**, Ben-Gurion University of the Negev, Israel  
**Jörg Wittwer**, University of Freiburg, Germany

#### ***Former Editors***

**Erik de Corte**, KU Leuven, Belgium  
**Anastasia Efklides**, Aristotle University of Thessaloniki, Greece  
**Lucia Mason**, University of Padua, Italy  
**Neil Mercer**, University of Cambridge, United Kingdom  
**Roger Säljö**, Göteborgs Universitet, Dept. of Education & Educational Research, Sweden  
**Wolfgang Schnotz**, University Koblenz - Landau, Germany  
**Jan Vermunt**, University of Cambridge, UK

## GUIDE FOR AUTHORS

---

### INTRODUCTION

As an international, multi-disciplinary, peer-refereed journal, Learning and Instruction provides a platform for the publication of the most advanced scientific research in the areas of learning, development, instruction and teaching. The journal welcomes original empirical investigations. For manuscripts with an innovative or weighty methodology section, supplementary on-line material outlining the methodology is welcome (e.g., equations, data-treatment, syntax code, example data). The papers may represent a variety of theoretical perspectives and different methodological approaches. They may refer to any age level, from infants to adults and to a diversity of learning and instructional settings, from classroom to informal learning. They may rest on the full spectrum of established methodologies, from laboratory experiments to field observations. The major criteria in the review and the selection process concern the significance of the contribution to the area of learning and instruction. Pure method studies (e.g., instrument validation) and meta-analyses (i.e., studies of published studies), are more suitable for other specialized journals. Descriptions of learning environments (e.g., curriculum plans) are more suitable for practitioner journals. Studies which rely overly on self-report measures are typically not accepted.

#### Rigor of studies

##### Empirical research

Empirical research designs needs to state the extent to which the studies are representative of a particular population. The authors need to state the hierarchical structure of the data (e.g., time-points nested in students, nested in schools) and explicitly state how they have addressed this structure in their analyses. Supplementary materials including data quality control, alternative models, explicit formulas used in statistical analyses and modeling are welcome. Prior publications based on the same project and/or data must be acknowledged, especially prior publications using the same or similar measures. The unique contributions of a given manuscript as well as any overlap with prior publications based on the same project and/or data must be stated explicitly

##### Experimental designs

Experimental designs should report on effect sizes found in previous studies in the field, to form a basis for a priori power calculations (or simulations) for the authors' particular design. Statements of implementation fidelity and treatment need to be explicit. Authors should demonstrate that findings are not due to extreme cases or outliers. JLI accepts pre-registered studies but does not provide its own pre-registration forum

##### Qualitative studies

Studies in which qualitative methods are used are required to outline sufficient/adequate/specific procedural explanation to ascertain whether the standards for validity and reliability of the reported data are met, and an adequate vocabulary for these needs to be adhered to consistently. Procedures for e.g., inter-observer reliability, triangulation and/or audit trails need to be transparent and thoroughly grounded in the literature. Overly descriptive studies are typically not accepted.

##### *Registered reports*

Learning and Instruction welcomes the submission of registered reports. To find out more about the process of preparing the manuscript and submitting, please refer to our [https://www.elsevier.com/\\_\\_data/promis\\_misc/JLI Registered Report Guidelines FINAL.pdf](https://www.elsevier.com/__data/promis_misc/JLI Registered Report Guidelines FINAL.pdf)

##### *Contact details for submission*

Authors are requested to submit their papers electronically by using the Learning and Instruction online submission and review web site ( <https://www.editorialmanager.com/jli/default.aspx> ). This site will guide authors stepwise through the submission process. Authors are requested to submit the text, tables, and artwork in electronic form to this address. Authors who are unable to provide an electronic version or have other circumstances that prevent online submission must contact the Editor prior to submission to discuss alternative options; email: [jli@elsevier.com](mailto:jli@elsevier.com). The Publisher and Editor regret that they are not able to consider submissions that do not follow these procedures.

##### *Submission checklist*

You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

## Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:

- E-mail address
- Full postal address There is an opportunity to provide a statement of author responsibilities ("CRedit"). Such statements could be particularly useful for e.g., for doctoral students preparing a "dissertations by publication", and their submitted manuscript constitutes a part of that planned dissertation.

All necessary files have been uploaded:

*Manuscript:*

- Include keywords (using the JLI taxonomy words)
- All figures (include relevant captions)
- All tables (including titles, description, footnotes)
- Ensure all figure and table citations in the text match the files provided
- Indicate clearly if color should be used for any figures in print

*Graphical Abstracts / Highlights files* (where applicable)

*Supplemental files* (where applicable)

Further considerations

Manuscript has been 'spell checked' and 'grammar checked' Note that submitted manuscripts will not go through language-focused copy editing with the journal prior to or after acceptance; language-focused copy editing is the responsibility of the authors prior to submission Please prepare the manuscript for masked review; whenever possible, please use author names and references for self-citations but make sure that you use third person to discuss the work (see Review Policy below); please use "Authors, date" only if a self-citation by name would reveal your identity (e.g., if you are citing unpublished work, work in progress, IRB approval, etc.). All references mentioned in the Reference List are cited in the text, and vice versa

- Permission has been obtained for use of copyrighted material from other sources (including the Internet)
- A competing interests statement is provided, even if the authors have no competing interests to declare
- Journal policies detailed in this guide have been reviewed
- Referee suggestions and contact details provided, based on journal requirements

For further information, visit our [Support Center](#).

## BEFORE YOU BEGIN

### *Ethics in publishing*

Please see our information pages on [Ethics in publishing](#) and [Ethical guidelines for journal publication](#).

### *Declaration of interest*

All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential competing interests include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors must disclose any interests in two places: 1. A summary declaration of interest statement in the title page file (if double anonymized) or the manuscript file (if single anonymized). If there are no interests to declare then please state this: 'Declarations of interest: none'. This summary statement will be ultimately published if the article is accepted. 2. Detailed disclosures as part of a separate Declaration of Interest form, which forms part of the journal's official records. It is important for potential interests to be declared in both places and that the information matches. [More information](#).

### *Submission declaration*

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere including electronically in the same form, in English or in any other language, without the written consent of the copyright-holder. In instances where authors prepare

multiple submissions using the same dataset or use partially overlapping variables in two or more articles, this needs to be declared upfront in the letter to the editor. Masked reference(s) to previous studies based on the same dataset need to be included in the manuscript itself so the reader can understand the novelty of new study in relation to the previous articles. Please consult the APA-manual on piecemeal publications. In cases where the manuscript is part of a larger project (e.g., prospective longitudinal study, an intervention study with numerous arms, etc.) in which other partly overlapping publications already exist, or are planned in parallel to the submitted manuscript, need to be declared in the accompanying letter to the editor. Authors are asked to be upfront declaring such manuscripts. A manuscript may be returned if the degree of overlap is found to be too large.

#### *Preprints*

Please note that [preprints](#) can be shared anywhere at any time, in line with Elsevier's [sharing policy](#). Sharing your preprints e.g. on a preprint server will not count as prior publication (see '[Multiple, redundant or concurrent publication](#)' for more information).

#### *Use of inclusive language*

Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Articles should make no assumptions about the beliefs or commitments of any reader, should contain nothing which might imply that one individual is superior to another on the grounds of race, sex, culture or any other characteristic, and should use inclusive language throughout. Authors should ensure that writing is free from bias, for instance by using 'he or she', 'her/his' instead of 'she' or 'her', and by making use of job titles that are free of stereotyping (e.g. 'chairperson' instead of 'chairman' and 'flight attendant' instead of 'stewardess'), or particular attributes of a person (e.g., student with special educational needs instead of disabled student). Please consult the APA-manual.

#### **Author contributions**

For transparency, we encourage authors to submit an author statement file outlining their individual contributions to the paper using the relevant CRediT roles: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing. Authorship statements should be formatted with the names of authors first and CRediT role(s) following. [More details and an example](#)

#### **Changes to authorship**

Authors are expected to consider carefully the list and order of authors **before** submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only **before** the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the **corresponding author**: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed.

Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors **after** the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.

#### *Article transfer service*

This journal is part of our Article Transfer Service. This means that if the Editor feels your article is more suitable in one of our other participating journals, then you may be asked to consider transferring the article to one of those. If you agree, your article will be transferred automatically on your behalf with no need to reformat. Please note that your article will be reviewed again by the new journal.

[More information.](#)

#### **Copyright**

Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see [more information](#) on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. [Permission](#) of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has [preprinted forms](#) for use by authors in these cases.

For gold open access articles: Upon acceptance of an article, authors will be asked to complete a 'License Agreement' ([more information](#)). Permitted third party reuse of gold open access articles is determined by the author's choice of [user license](#).

### **Author rights**

As an author you (or your employer or institution) have certain rights to reuse your work. [More information](#).

*Elsevier supports responsible sharing*

Find out how you can [share your research](#) published in Elsevier journals.

### **Role of the funding source**

You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

### **Open access**

Please visit our [Open Access page](#) for more information.

*Language (usage and editing services)*

Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the [English Language Editing service](#) available from Elsevier's Author Services.

*Submission*

Submission to this journal proceeds totally online, via <https://www.editorialmanager.com/jli/default.aspx>, and you will be guided stepwise through the creation and uploading of your files. The system automatically converts source files to a single PDF file of the article, which is used in the peer-review process. Please note that even though manuscript source files are converted to PDF files at submission for the review process, these source files are needed for further processing after acceptance. All correspondence, including notification of the Editor's decision and requests for revision, takes place by e-mail removing the need for a paper trail.

### **Review Policy**

This journal has adopted a double blind reviewing policy, where both the referee and author remain anonymous throughout the process. Please remove all identifying features from the paper itself, ensuring that Authors' identity is not revealed. However, this does not preclude Authors from citing their own works. However, Authors must cite their works in a manner that does not make explicit their identity.

**Acceptable:** "Brown (2005) has indicated that . . ."

**Acceptable:** "Some scholars have indicated that . . . (e.g., Brown, 2005; Green, 2008)"

**Unacceptable:** "As we have indicated (Brown, 2005), . . ."

**Unacceptable:** "In a previous study (Brown, 2005), we have indicated that . . ."

### **PREPARATION**

Manuscripts should be no longer than 8,000 words for full length articles (including tables, figures or references). Only manuscripts with multiple studies can go beyond this length. If your manuscript has multiple studies, please include the text 'This manuscript involves multiple studies, please ignore the word count check' in the cover letter. Word count is not applicable for revised versions and

resubmissions. We appreciate that some of the reporting requirements we request can challenge the word limit imposed. As such, in cases where additional words are required to support the strength of your essential data presentation, i.e. including standard errors, or reporting multiple covariates; we allow up to an additional 10% in the word count. In cases that would require a yet higher word count, the authors are advised to contact the journal.

### **Statistics check and reporting of findings**

Reporting of findings should follow APA-guidelines (e.g., formatting of tables, number of decimal points, plotting of interaction effects), always include effect sizes, and sufficient information for meta-analyses. Experimental and intervention designs need to include a priori power-calculations for desired sample sizes. Authors are asked to plot interaction effects. Manuscript may be returned to authors if these procedures are not followed.

### **Peer review**

This journal operates a double anonymized review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then typically sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. Editors are not involved in decisions about papers which they have written themselves or have been written by family members or colleagues or which relate to products or services in which the editor has an interest. Any such submission is subject to all of the journal's usual procedures, with peer review handled independently of the relevant editor and their research groups. [More information on types of peer review.](#)

### **Double anonymized review**

This journal uses double anonymized review, which means the identities of the authors are concealed from the reviewers, and vice versa. [More information](#) is available on our website. To facilitate this, please include the following separately:

*Title page (with author details):* This should include the title, authors' names, affiliations, acknowledgements and any Declaration of Interest statement, and a complete address for the corresponding author including an e-mail address.

*Anonymized manuscript (no author details):* The main body of the paper (including the references, figures, tables and any acknowledgements) should not include any identifying information, such as the authors' names or affiliations.

### **Use of wordprocessing software**

It is important that the file be saved in the native format of the wordprocessor used, including LaTeX (.tex, with accompanying .bib file). The text should be in single-column format. Keep the layout of the text as simple as possible.

### **Article structure**

Manuscripts should be prepared according to APA, 6th ed., except for the additional requirement of numbering the sections, as described below.

#### *Subdivision - numbered sections*

Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line. Please include page numbers.

#### *Introduction*

State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results. Prior work based on the same project and/or data must be referenced, and the unique contribution of the new submission must be stated explicitly.

#### *Results*

Results should be clear and concise.

#### *Discussion*

This should explore the significance of the results of the work, not repeat them. Avoid extensive citations and discussion of published literature.



### Conclusions

The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

### Appendices

If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

### Essential title page information

- **Title.** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
- **Author names and affiliations.** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. You can add your name between parentheses in your own script behind the English transliteration. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.
- **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. This responsibility includes answering any future queries about Methodology and Materials. **Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.**
- **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

### Highlights

Highlights are mandatory for this journal as they help increase the discoverability of your article via search engines. They consist of a short collection of bullet points that capture the novel results of your research as well as new methods that were used during the study (if any). Please have a look at the examples here: [example Highlights](#).

Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).

### Abstract

A concise and factual abstract is required (maximum 150 words). The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

### Graphical abstract

Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. You can view [Example Graphical Abstracts](#) on our information site.

Authors can make use of Elsevier's [Illustration Services](#) to ensure the best presentation of their images and in accordance with all technical requirements.

### Highlights example:

#### **Learning and Instruction, volume 22, issue 1, 47-61**

- Students' misconceptions exist at different levels of representational complexity.
- They could be at the level of false beliefs, mental models, or ontological categories.

- To achieve conceptual change at mental model level, instruction should be at a holistic level.
- One way to do this is through analogical comparison of flawed self model and correct expert model.
- This leads to more robust conceptual change than instruction directed at false beliefs.

#### *Keywords*

Immediately after the abstract, provide a maximum of 5 keywords, using British or American spelling, but not a mixture of these, and avoiding general and plural terms and multiple concepts (avoid, for example, "and", "of"). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

#### *Abbreviations*

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

#### *Acknowledgements*

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

#### *Formatting of funding sources*

List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

#### *Footnotes*

Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors can build footnotes into the text, and this feature may be used. Otherwise, please indicate the position of footnotes in the text and list the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

### **Artwork**

#### *Electronic artwork*

##### *General points*

- Make sure you use uniform lettering and sizing of your original artwork.
- Embed the used fonts if the application provides that option.
- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Size the illustrations close to the desired dimensions of the published version.
- Submit each illustration as a separate file.
- Ensure that color images are accessible to all, including those with impaired color vision.

A detailed [guide on electronic artwork](#) is available.

**You are urged to visit this site; some excerpts from the detailed information are given here.**

#### *Formats*

If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.

Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

EPS (or PDF): Vector drawings, embed all used fonts.

TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.

TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.

TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale), keep to a minimum of 500 dpi.

**Please do not:**

- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
- Supply files that are too low in resolution;
- Submit graphics that are disproportionately large for the content.

*Color artwork*

Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF), or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color online (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. **For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article.** Please indicate your preference for color: in print or online only. [Further information on the preparation of electronic artwork.](#)

*Figure captions*

Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. A caption should comprise a brief title (**not** on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

**Tables**

Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

**References**

*Citation in text*

Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

*Web references*

As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

*Data references*

This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

*References in a special issue*

Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

### Reference management software

Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support [Citation Style Language styles](#), such as [Mendeley](#). Using citation plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal's style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. [More information on how to remove field codes from different reference management software](#).

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:

<http://open.mendeley.com/use-citation-style/learning-and-instruction>

When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

### Reference style

*Text:* Citations in the text should follow the referencing style used by the American Psychological Association. You are referred to the Publication Manual of the American Psychological Association, Seventh Edition, ISBN 978-1-4338-3215-4, copies of which may be [ordered online](#).

*List:* references should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

#### Examples:

Reference to a journal publication:

Van der Geer, J., Hanraads, J. A. J., & Lupton, R. A. (2010). The art of writing a scientific article. *Journal of Scientific Communications*, 163, 51–59. <https://doi.org/10.1016/j.sc.2010.00372>.

Reference to a journal publication with an article number:

Van der Geer, J., Hanraads, J. A. J., & Lupton, R. A. (2018). The art of writing a scientific article. *Heliyon*, 19, Article e00205. <https://doi.org/10.1016/j.heliyon.2018.e00205>.

Reference to a book:

Strunk, W., Jr., & White, E. B. (2000). *The elements of style* (4th ed.). Longman (Chapter 4).

Reference to a chapter in an edited book:

Mettam, G. R., & Adams, L. B. (2009). How to prepare an electronic version of your article. In B. S. Jones, & R. Z. Smith (Eds.), *Introduction to the electronic age* (pp. 281–304). E-Publishing Inc.

Reference to a website:

Powertech Systems. (2015). *Lithium-ion vs lead-acid cost analysis*. Retrieved from <http://www.powertechsystems.eu/home/tech-corner/lithium-ion-vs-lead-acid-cost-analysis/>. Accessed January 6, 2016

Reference to a dataset:

[dataset] Oguro, M., Imahiro, S., Saito, S., & Nakashizuka, T. (2015). *Mortality data for Japanese oak wilt disease and surrounding forest compositions*. Mendeley Data, v1. <https://doi.org/10.17632/xwj98nb39r.1>.

Reference to a conference paper or poster presentation:

Engle, E.K., Cash, T.F., & Jarry, J.L. (2009, November). *The Body Image Behaviours Inventory-3: Development and validation of the Body Image Compulsive Actions and Body Image Avoidance Scales*. Poster session presentation at the meeting of the Association for Behavioural and Cognitive Therapies, New York, NY.

### Video

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the file in one of our recommended file formats with a preferred maximum size of 150 MB per file, 1 GB in total. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including [ScienceDirect](#). Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For

more detailed instructions please visit our [video instruction pages](#). Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

### **Data visualization**

Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions [here](#) to find out about available data visualization options and how to include them with your article.

### *Supplementary data*

Supplementary material such as method applications (as described above), images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (word, pdf, Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

### **Research data**

This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the [research data](#) page.

### *Data linking*

If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the [database linking page](#).

For [supported data repositories](#) a repository banner will automatically appear next to your published article on ScienceDirect.

In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

### *Mendeley Data*

This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. During the submission process, after uploading your manuscript, you will have the opportunity to upload your relevant datasets directly to *Mendeley Data*. The datasets will be listed and directly accessible to readers next to your published article online.

For more information, visit the [Mendeley Data for journals page](#).

### *Data in Brief*

You have the option of converting any or all parts of your supplementary or additional raw data into a data article published in *Data in Brief*. A data article is a new kind of article that ensures that your data are actively reviewed, curated, formatted, indexed, given a DOI and made publicly available to all upon publication (watch this [video](#) describing the benefits of publishing your data in *Data in*

*Brief*). You are encouraged to submit your data article for *Data in Brief* as an additional item directly alongside the revised version of your manuscript. If your research article is accepted, your data article will automatically be transferred over to *Data in Brief* where it will be editorially reviewed, published open access and linked to your research article on ScienceDirect. Please note an [open access fee](#) is payable for publication in *Data in Brief*. Full details can be found on the [Data in Brief website](#). Please use [this template](#) to write your *Data in Brief* data article.

#### *Data statement*

To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the [Data Statement page](#).

## **AFTER ACCEPTANCE**

### **Online proof correction**

To ensure a fast publication process of the article, we kindly ask authors to provide us with their proof corrections within two days. Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors.

If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.

We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

### **Offprints**

The corresponding author will, at no cost, receive a customized [Share Link](#) providing 50 days free access to the final published version of the article on [ScienceDirect](#). The Share Link can be used for sharing the article via any communication channel, including email and social media. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's [Author Services](#). Corresponding authors who have published their article gold open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

#### *Additional information*

##### *Discount*

Authors are entitled to a 30% discount on Elsevier books (excluding major reference works).

##### *Fast electronic publication*

Once the article has been proofed by the author, it will be published immediately on the journal's 'Articles in Press' section online, thus making it available to subscribers to read and cite. For more information, visit: <http://www.sciencedirect.com/science/journal/09594752> .

## **AUTHOR INQUIRIES**

Visit the [Elsevier Support Center](#) to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch.

You can also [check the status of your submitted article](#) or find out [when your accepted article will be published](#).

© Copyright 2018 Elsevier | <https://www.elsevier.com>