

Studies in Comics  
Volume 11 Number 1

© 2020 Intellect Ltd Article. English language. [https://doi.org/10.1386/stic\\_00014\\_1](https://doi.org/10.1386/stic_00014_1)

Received 1 November 2019; Accepted 12 February 2020

---

**LARS WALLNER**

Linköping University

**KATARINA ERIKSSON BARAJAS**

Linköping University

# Using comics and graphic novels in K-9 education: An integrative research review

## Keywords

classroom  
comics  
education  
graphic novels  
integrative research  
review  
K-9

## Abstract

*The aim of this article is to increase knowledge on the use of comics as materials in K-9 education (ages 6–15). This is achieved through an integrative research review. Reference lists and websites have been searched, both by database searches and manually, and the results analysed and cross-referenced to identify common areas of research and possible gaps in knowledge. 55 texts (research articles and doctoral theses) were found, with 40 first authors from fourteen countries. The results revealed several gaps in knowledge. Most of the analysed studies had been carried out in North America, which suggests that more studies in other educational contexts, published in English, are needed, and that cross-national studies of comics in education will be productive. Furthermore, only three of the analysed texts describe studies*

*that have high ecological validity, while all of the remaining 52 studies were 'staged' studies, in which the researcher had introduced material and observed the results. This suggests that further studies that utilize non-experimental research methods are needed. Finally, most studies focus on students' reading preferences in regard to comics, rather than, for example, on how students compose comics or what they learn through comics. Thus, further studies that explore student work with comics, and examine the kinds of knowledge that reading comics enables, are desirable.*

As staples of popular culture around the world, comic strips, comic books and graphic novels (henceforth comics) have been used as educational tools for the past hundred years (Tilley and Weiner 2017). Despite this, relatively little research has been done on the educational possibilities of comics. Although there is research from as early as the 1940s (Witty 1941a, 1941b), it is difficult to measure the validity of this with today's standards. There have been a few attempts at research reviews outside of those found in doctoral theses (Clark 2017; Tilley and Weiner 2017). However, these have not been exhaustive analyses, but rather broad strokes and for this reason it remains difficult for researchers and educators to form a more complete picture of this research.

The advantage of integrative research reviews is that they gather research on a topic with the aim to increase our understanding of developments in that area of study (Cooper 1982, 2017). An integrative research review describes how the topic is conceptualized, how research methods and theories influence findings, and the strengths and weaknesses of earlier research. Thus, an integrative research review into the field of comics in education is long overdue, and will provide researchers and educators with a fuller picture of the field: what research has been done, what we have learned and what gaps exist.

## **Purpose and research questions**

The purpose of this review is to integrate topical research in order to establish an understanding of the use of comics in the field of K-9 education. As not much is known about comics in education (see, e.g. Tilley and Weiner 2017), a review of the research, which can unveil possible gaps, strengths and trends, is essential to the continued development of the field. Throughout this research review, the following questions are addressed:

- What approaches are utilized in research on comics in education?
- What study foci does research on comics in education have?
- What school subjects and populations are included and excluded in research on comics in education?

1. See <http://www.english.ufl.edu/comics/scholars/>. Accessed 16 September 2020.
2. Wallner (2019) is an exception. This article has, however, been available online since April 2018, and has for this reason been included.

The results are then discussed and problematized from a perspective of finding gaps in knowledge and further development of the field of research on comics in education.

This research review is not a complete picture of comics in the field of education – we have excluded pre-school, after-school educational programmes and upper secondary and higher education. It does, however, give a fairly comprehensive insight into the research conducted within K-9 (kindergarten through ninth grade, or ages 6–15) educational programmes, and gives future researchers a large piece of the puzzle.

## Methods

### *Performing an integrative research review*

An integrative research review has two purposes: to compare existing research in order to establish a state of knowledge in the field and to identify central aspects and issues in a field in order to discover gaps in knowledge (Cooper 1982, 2017; Taveggia 1974). In order to find the strengths and weaknesses of a field of research, it is necessary and beneficial to perform a review of the literature, as exhaustively as possible. Thus, this article aims to collect, review and analyse previous research on comics in education.

This has primarily been done using database searches, as described below. We have also conducted manual searches (cf. Eriksson Barajas et al. 2013) through studying reference lists of relevant works, and mass solicitations (Cooper 2017) through COMIXSCHOLARS-L,<sup>1</sup> an e-mail discussion list for a large international network of comics researchers. Although less systematic, this manual search was necessary in order to fill potential gaps of data. These searches were done in the fall of 2018, which limits our field to publications available at that time.<sup>2</sup>

#### *Database search: Identification*

The first step in performing database searches was to formulate the right questions, field of research and types of study (cf. Brunton et al. 2012). Using database searches, rather than merely searching specific journals with which we were familiar, helped us escape bias in the selection of literature (Cooper 2017) and gave a more complete view of the field. The research questions defined the criteria for the search, whether broad or narrow.

The next step was to choose the appropriate databases, keywords and subject fields (Torgerson 2003). Initially, the following five search engines and databases were used: ASSIA (Applied Social Sciences Index and Abstracts, ProQuest), ERIC (Education Resources Information Center, EBSCO), MathEduc, Scopus and Web of Science. Together, these collect the majority of scholarly works published within the field of education.

Since our interest was international scholarly work, we limited our search to peer-reviewed works (to ensure academic quality) and works available in English (in order to be internationally accessible). We were aware, of course, that work published in other languages is of equal quality and relevance, but as this is *less* accessible to an international audience (and to us, specifically), we settled for works published in English. In the search process, works included were screened for quality by limiting the selection to peer-reviewed, internationally accessible journals. Thus, we excluded certain textbooks, such as Frey and Fisher's (2008) *Teaching Visual Literacy*. Such textbooks are relevant to practising teachers, but are prescriptive and do not present the research on which they are based, only the results and theory that come from research.

In line with our purpose, general search words were selected and used (Eriksson Barajas et al. 2013). Initially, we constructed search strings using different variations of the term *comic*, for example, *comic book*, *comic strip*, etc. However, as it was reasonable to believe that a search for the basic term *comic* would result in hits that included several suffixes, we chose to use the basic search term together with truncation, as shown below.

Since our interest was primarily in education, a combination of the terms *education*, *teaching* and *classroom* was considered most appropriate, in order to cover the relevant research within the educational sciences. Thus, *comic* was combined with one or several of the other three, forming the search strings shown in Table 1. These were entered into the most general search forms, such as 'all text' or 'anywhere'. The Boolean term AND was used where available, or the built-in conjunction of the search engine, combined with the truncation character (\*) (cf. Eriksson Barajas et al. 2013). In the initial searches, the terms *manga* and *graphic novel* were found to be frequently used instead of, for example, *comic book* or *graphic novel*, and these were, therefore, added to the search strings.

This search was then restricted to English language, scholarly (peer-reviewed) articles from academic journals. The results from the searches were then cross-referenced in the search engines to rule out duplicates. Table 2 shows the search results. These results were then further cross-referenced using the EndNote programme, to give 1404 unique results. The subject fields ranged from microbiology and chemical engineering to cognitive psychology, economy and educational philosophy. The oldest hit was to an article from 1890.

It became apparent that the approach used was inefficient, mainly due to the low degree of correlation between the use of keywords, subject words, etc. The range of subjects and fields was simply too vast. This search had given too many results, many of which had little relevance for our work, and thus, further refinement was required in order to give a workable number of articles to analyse. Since our interest was primarily in educational science, the search was further refined using the subject field of educational science, while also including results for social sciences, arts and humanities, and psychology, where applicable, as these are often associated with educational science. Journals within medicine, the natural sciences, technology, business, and other fields were

<b>Keywords/search strings used</b>	<b>No. of unique hits</b>
Comic*	1574
AND classroom	90
AND classroom AND educ*/ation	72
AND classroom AND teach*/ing	47
Graphic* AND novel*	386
AND classroom	43
AND classroom AND educ*/ation	42
AND classroom AND teach*/ing	25
Manga	146
AND classroom	4
AND classroom AND educ*/ation	3
AND classroom AND teach*/ing	2

*Table 1: Initial keyword and search string combinations.*

<b>Search engine</b>	<b>No. of unique hits</b>
ASSIA (ProQuest)	286
ERIC (EBSCO)	764
MathEduc	2
Scopus	967
Web of Science	80

*Table 2: Search results.*

removed from the results. At the same time, the search was also widened, from only peer-reviewed articles to academic book chapters and theses. This enabled us to include other types of scholarly work, while ruling out more specific types of work, such as reviews and non-scholarly periodicals. Table 3 shows the results from the second round of searching.

It is here worthy of note that the results from Scopus and ERIC have decreased immensely, while those from ASSIA and Web of Science only marginally. As MathEduc had produced very few results to begin with, these were not further refined.

### *Screening and eligibility*

The results from both the manual searches and database searches were cross-referenced using EndNote (both automatically and manually), leaving 366 unique works. Using a model from Eriksson Barajas et al. (2013) for research reviews, these pieces were audited by title, keywords and abstract, in order to determine their relevance for our topic. Table 4 lists the inclusion criteria used in this audit.

Those left ( $N=71$ ) were read in full length. Certain pieces found to be not relevant as specified by the criteria in Table 4 (but which had slipped through previous vetting) were removed at this stage. Examples of texts excluded at this point are Greiffenhagen's (2013) work on students using a digital storyboarding programme to work with speech bubbles in Macbeth (works with digital comics were excluded), Leander and Boldt's (2012) post-humanist readings of a child's engagement with manga at home (due to being out-of-school practice), and Helsby's (1999) dissertation (as it explores work with 'learning support students [special needs]').

### *Studies included*

Thus, we were left with 55 texts for analysis (Appendix 1). The 55 texts represented a wide range of methodology and theoretical perspectives. They had been produced during the past century and

<b>Search engine</b>	<b>No. of unique hits</b>
ASSIA (ProQuest)	230
ERIC (EBSCO)	84
MathEduc	2
Scopus	70
Web of Science	78

*Table 3: Search results from second round.*

3. Of course, this is a problematic way of categorizing students, but we have simply chosen to exclude studies that claim to investigate students with special education needs, disability, etc.
4. Some notable studies were excluded because they focus solely on teachers: Greenfield (2017), Lapp et al. ([2011] 2012) and Nesmith et al. (2011). These are interesting studies in and of themselves, but they did not fit our focus on classroom work.

Study element	Criteria
Publication type/quality	Included: peer-reviewed scholarly books or journal articles (as listed in ISI/Web of Science, Scopus or the Norwegian Register of Scientific Journals, Series and Publishers [NRSJSP]), theses accessible online. Excluded: review articles, popular books/chapters, reports, magazine articles.
Context of study	Included: school/formal/educational contexts, K-9, primary, secondary school. Excluded: home schooling, leisure reading, out-of-school, after-school programmes, college, upper secondary, non-school-related information campaigns, public information, literary analysis of comics.
Materials used	Included: comic books, comic strips, graphic novels. Excluded: cartoons, serial photographs, digital comics/comics-online software.
Participants	Included: 'typically developed' students (and their teachers). <sup>3</sup> Excluded: pre-school children, pre-service teachers, upper secondary school and higher education, 'for-use-in-teaching'/instructive articles, severe mental, emotional and physical impairments, teachers only. <sup>4</sup>

Table 4: Inclusion criteria.

offered a range of very different foci. As this was a relatively small number of works, we did not exclude works on the basis of quality, as long as they maintained the standard academic rigour, that is, consistent use of references, a (somewhat) transparent methodology and clear research purpose (Cooper 2017; Eriksson Barajas et al. 2013). Cooper (2017) recommends that studies that offer some data or implications from which to draw useful inferences be included, even though the rigour of the research might be lacking. We considered Cooper's recommendation when making the selection.

### Findings

This section details some of the data from the 55 texts analysed in this article. We present some aspects of the texts, to be used as a foundation for the discussion that follows. These results stem from our research questions, which concerned the research approaches, study foci, populations and school subjects that are utilized in research on comics in education.

### *Research approaches used*

The studies included were published between 1941 and 2019, most of them ( $n=37$ ) in the last ten years (Figure 1). Naturally, there could be any number of reasons for this that we will not discuss here, as it has not been the focus of our analysis (see, e.g. Wallner 2017a).

Qualitative studies dominate in the analysed texts, where 34 of 55 are qualitative, fourteen are quantitative, and a few ( $n=7$ ) use mixed methods (e.g. Allen and Ingulsrud 2005; Cook 2017; Moeller 2016). Interestingly, all the studies published before the year 2000 were quantitative, indicating that the qualitative approach gained popularity among educational researchers around this time.

A wide range of methods has been used in the research presented in the articles. Common methods include individual interviews ( $n=25$ ), questionnaires ( $n=21$ ), observations ( $n=20$ ), focus-group interviews ( $n=13$ ), collecting of student-made materials ( $n=11$ ) and tests ( $n=11$ ). Most of the studies have used more than a single method for data collection, where the most common combination is questionnaires and either individual or focus-group interviews ( $n=15$ , e.g. Lam Toh et al. 2017; Lin and Lin 2016; Tsai 2015).

Different studies describe different methodological approaches when it comes to how comics are introduced into the classroom, but it is clear that a majority of the studies in our material are what we call 'staged' studies, where the researcher either is the teacher of the class or has introduced the material that is being used for classroom work. Some of these are called 'experiments', some are called 'action studies'. Only three studies (Ranker 2007; Wallner 2017b, 2019) present data with high ecological validity, or naturally occurring data (Potter 2010), in which the interaction being studied would have taken place regardless of the presence of the researcher.

### *Major study foci*

The classroom work described in the studies was coded as working with reading comics in some form, working with composition<sup>5</sup> or both. Most of the studies ( $n=50$ ) include students reading comics, while surprisingly few studies ( $n=5$ ) focus only on some sort of composition work. In some studies ( $n=10$ ), the students do both types of activity. Pantaleo (2011a, 2011b, 2012, 2013a, 2013b, 2018) and Pantaleo and Bombphray (2011) have done significant work in the field of education. In their studies, participants were taught compositional features of comics and picture books and were then asked to produce their own material. Pantaleo analysed the material produced by looking at how students utilized these compositional features. Wallner (2019) also explored this practice, wherein students were instructed to create their own comic from cut-out Disney comic book panels. Wallner then analysed how students utilized the gutter of their comics (the blank space between comic frames) to argue for the comic book sequence, as well as the logic of their narrative.

5. Composition includes writing, drawing, cutting and pasting comics. However, this is limited to the creation of comic texts, and, for example, students writing an analysis of comics has not been coded as composition.



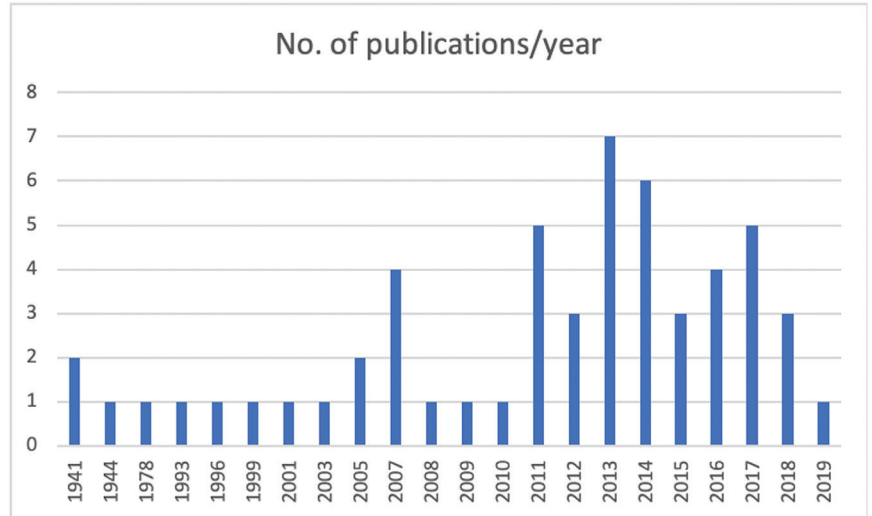


Figure 1: Publication year of texts.

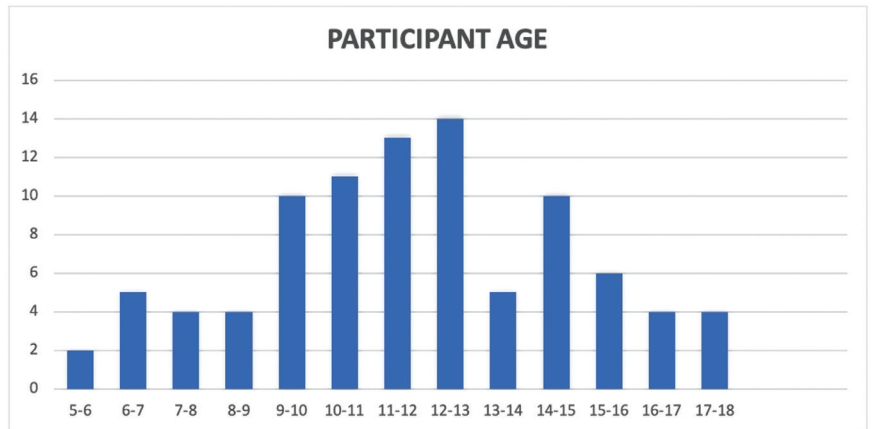


Figure 2: Participant age.

The study focus of approximately half of the studies either included or focused on, reader *preference* as one factor ( $n=25$ ).<sup>6</sup> The question of preference comes in many shapes: it may use a gender perspective (whether boys and girls prefer different comics [Allen and Ingulsrud 2005; Davies and Brember 1993; Witty 1941b]); how students choose between different types of comics (Witty 1941a, 1941b); the aspects that students find appealing about a certain type of comic (Norton 2003; Pantaleo and Bombphray 2011); whether students prefer a comic or a 'traditional' version of a text (Bosma et al. 2013; Brenna 2013; Jennings et al. 2014); whether students enjoy a comic introduced, or created, by the researcher or teacher (Sharpe and Izadkhah 2014; Spiegel et al. 2013; Weitkamp and Burnet 2007); or whether students find a certain comic 'funny' (Weitkamp and Burnet 2007; Lazzarich 2013; Kuhlman and Danielson 2010; Rule and Auge 2005; Özdemir 2017).

6. Many studies include two or more foci, for example, investigating both student preference and gender perspectives, looking at comprehension and motivation, and so on.

### *Participant population*

We have not analysed information about participant ethnicity or socio-economic class, in part because this information is presented in very different ways in academic publications (e.g. American publications tend to be quite detailed, whereas many European journals do not include this information).

However, we were curious about the age range included in research on comics in education (Figure 2), which all the articles presented (although it is difficult, to say the least, to correlate the school systems and age of participants in different countries). Perhaps not surprisingly, students in four age groups (9–10, 10–11, 11–12 and 12–13), (which correspond to the American middle school and parts of the British Key Stages 2–3) were included in most studies ( $n=10$ , 11, 13 and 14, respectively). Ages 14–15 were also extensively studied, with ten studies covering this age range. Younger age groups have not been studied as often: age 5–6 ( $n=2$ ), age 6–7 ( $n=5$ ), age 7–8 ( $n=4$ ) and age 8–9 ( $n=4$ ).

The studies included in the review come from several countries (Table 5), of which North America dominates in the studies on comics in education published in English (although it should be noted that Pantaleo's studies make up a majority of the Canadian studies). This is perhaps not surprising due to the dominance of English throughout America and Europe, but it is interesting to note that what seems to be lacking here are: (1) more studies in the field with data from non-English-speaking countries (published in English), and (2) studies that collect data from several countries.

### *School subjects included in the data*

Language arts are clearly the school subject covered most often, 38 of the 55 studies. (Note that 'school subject' is not an exclusive category, and a study may include more than one subject.) Language arts include such topics as studies on grammar (Akkaya 2013), vocabulary uptake (Brugar

Australia	2	Iran	1	Singapore	1	Sweden	2	UK	5
Canada	11	Japan	1	Slovakia	1	Taiwan	1	USA	25
Croatia	1	Korea	1	Slovenia	1	Turkey	2		

Table 5: Numbers of studies from various countries.

et al. 2018; Edwards 2008), reading comprehension (Brenna 2013; Jennings et al. 2014) and literacy didactics (Kerneza and Kosir 2016; Wallner 2017b, 2019), but do not include studies on English as a second/foreign language (ESL/EFL), or second-language acquisition (SLA, non-English). These were specifically categorized in the texts (Chiera-Macchia and Rossetto 2011; Chun 2009; Cimermanová 2015; Huh and Suh 2018; Ranker 2007). Other subjects were also studied through comics, although these have in some cases been considered as a single category, as there were not many of each. These categories include social studies, for example history (Bosma et al. 2013), crisis management (Sharpe and Izadkhah 2014) and citizenship (Huh and Suh 2018); the natural sciences, for example chemistry (Weitkamp and Burnet 2007), virology (Spiegel et al. 2013), physics (Özdemir 2017; Lin and Lin 2016); or simply 'science' (Dallacqua 2016). Surprisingly, art education was only a designated school subject in a single study (Kerneza and Kosir 2016).

## Discussion

*Preference* is an interesting category in our analysis. Most researchers seem to use comics in classrooms on the basis that they are meant to be funny – perhaps because this is the view that participants take (Kuhlman and Danielson 2010), or because the researchers themselves view 'humour [as] an important feature of many comic strips' (Lazzarich 2013: 154). Many comic strips are indeed meant to be humorous, but this perspective raises some questions. First, humour is both subjective and contextual, and it is difficult to determine the value of a single comic strip/comic book based on the enjoyment that students get from it – that is how is the knowledge that a particular group of students appreciates a particular comic strip useful for other teachers in other countries, working with other groups? Second, not all comics are funny, and thus, it is difficult to use humour as a basis for discussing comics as a format. What can we learn about using comics, when the format as a whole is not defined by humour? Furthermore, Witty reported as early as the 1940s that adventure and excitement are more important factors for children's interest than humour (1941a, 1941b), but few preference studies have been undertaken in which humour has not been in focus. If we want to broaden the scope of how comics are viewed in general, we should investigate reading preferences for comics from other perspectives.

Another question concerns how much children's preference for comics is based on the fact that comics are 'new' materials in school? If comics became regular school reading, would students' interest in them fade? This problem is exacerbated in many of the intervention studies analysed here, where the researcher comes in as a breath of fresh air and introduces fun materials: of course the students are going to find this interesting and fun! One way to reduce this effect is to perform longitudinal studies in which students use comics over a long period, so that the 'honeymoon phase' of work with comics ends before the study does. Dallacqua's (2016) dissertation is an interesting example of this. Her year-long study showed that student motivation and interest held up throughout the period. However, her study is the only one that for which this analysis is possible, and further long-term studies are needed. Moreover, one year is short compared to a complete school career. Another way to reduce the effect of novelty and voluntariness is to perform more studies with ecological validity, in which students use comics as part of their regular classroom work, and the teacher controls the classroom with as little interference from the researcher as possible (as done by Ranker [2007] and Wallner [2017b, 2019]). This both minimizes the risk that the researchers draw conclusions from a setting that they have themselves created and lessens the possible effects of novel materials if the teacher regularly uses comics, even outside of the research project.

Another question that arises from the findings of this study is how to engage with the field of comics and education. Should we focus on the readers, focus on the materials or focus on both? These choices have methodological and theoretical consequences for the initial questions that are asked, and for the outcomes that are possible. At this time, much focus has been put onto comics themselves, and both literary scholars and school advocates have discussed the benefits and dangers of *certain* comics. Is there a beneficial way of corroborating the results from literary studies and school studies, and striving for consensus between these two professional groups?

## Conclusions

This article presents the results of examining 55 research texts in the field of comics and education, through database searches and manual searches of reference lists, e-mail lists and other means. The article sheds light on what approaches and different study foci are utilized in research on comics in education, and identifies the school subjects and populations that are included and excluded.

The results show that there has been a tendency to focus on qualitative interview studies in which researchers introduce materials to a group of students and evaluate their experiences of it. Studies have most often investigated student preferences for texts, either measuring comics against traditional texts, or simply asking students their opinions on certain comic book texts. That students enjoy comic book texts is hardly a novelty, and is confirmed by much of the current research, but it is still unclear whether students learn more from comics or not.

We suggest that future research on comics in education should engage with educationalists, and in this way ensure that more inductive, explorative studies are carried out, rather than intervention studies. Instead of asking students and teachers for their opinions on comics, it would be beneficial to know more about what teachers and students are doing with comics in the classroom.

## References

- Akkaya, A. (2013), 'A different activity in grammar learning in Turkish course: Educational comic strips', *International Journal of Academic Research*, 5:5, pp. 118–23.
- Allen, K. and Ingulsrud, J. E. (2005), 'Reading manga: Patterns of personal literacies among adolescents', *Language and Education*, 19:4, pp. 265–80.
- Arlin, M. and Roth, G. (1978), 'Pupils' use of time while reading comics and books', *American Educational Research Journal*, 15:2, pp. 201–16.
- Bosma, K., Rule, A. C. and Krueger, K. S. (2013), 'Social studies content reading about the American Revolution enhanced with graphic novels', *Social Studies Research and Practice*, 8:1, pp. 59–76.
- Brenna, B. (2013), 'How graphic novels support reading comprehension strategy development in children', *Literacy*, 47:2, pp. 88–94.
- Brugar, K. A., Roberts, K. L., Jiménez, L. M. and Meyer, C. K. (2018), 'More than mere motivation: Learning specific content through multimodal narratives', *Literacy Research and Instruction*, 57:2, pp. 183–208.
- Brunton, G., Stansfield, C. and Thomas, J. (2012), 'Finding relevant studies', in D. Gough, S. Oliver and J. Thomas (eds), *An Introduction to Systematic Reviews*, Los Angeles: Sage, pp. 107–34.
- Chase, M., Son, E. H. and Steiner, S. (2014), 'Sequencing and graphic novels with primary-grade students', *The Reading Teacher*, 67:6, pp. 435–43.
- Chiera-Macchia, A. and Rossetto, M. (2011), "'Visual learning is the best learning: It lets you be creative while learning" – Exploring ways to begin guided writing in second language learning through the use of comics', *Babel*, 45:2&3, pp. 35–40.
- Chisholm, J. S., Shelton, A. L. and Sheffield, C. C. (2017), 'Mediating emotive empathy with informational text: Three students' think-aloud protocols of Gettysburg – The graphic novel', *Journal of Adolescent and Adult Literacy*, 61:3, pp. 289–98.
- Chun, C. W. (2009), 'Critical literacies and graphic novels for English-language learners: Teaching "Maus"', *Journal of Adolescent and Adult Literacy*, 53:2, pp. 144–53.
- Cimermanová, I. (2015), 'Using comics with novice EFL readers to develop reading literacy', *Procedia: Social and Behavioral Sciences*, Special Issue: 'International Conference on New Horizons in Education, INTE 2014, 25-27 June 2014, Paris, France', 174:1, pp. 2452–59.

- Clark, E. E. (2017), 'Are comics effective materials for teaching ELLS? A literature review on graphic media for L2 instruction', *International E-Journal of Advances in Education*, 3:8, pp. 298–309.
- Cook, M. P. (2017), 'Now I "see": The impact of graphic novels on reading comprehension in high school English classrooms', *Literacy Research and Instruction*, 56:1, pp. 21–53.
- Cooper, H. M. (1982), 'Scientific guidelines for conducting integrative research reviews', *Review of Educational Research*, 52:2, pp. 291–302.
- Cooper, H. M. (2017), *Research Synthesis and Meta-Analysis: A Step-by-Step Approach*, Los Angeles: SAGE.
- Dallacqua, A. K. (2012a), 'Exploring literary devices in graphic novels', *Language Arts*, 89:6, pp. 365–78.
- Dallacqua, A. K. (2012b), 'Exploring the connection between graphic novel and film', *English Journal*, 102:2, pp. 64–70.
- Dallacqua, A. K. (2016), "'These books give me life": Considering what happens when comics and graphic novels are welcomed into a middle school space', Ph.D. thesis, Columbus, OH: Ohio State University.
- Dallacqua, A. K. and Sutton, D. (2014), 'Critical discussions: Using Satrapi's persepolis with high school language arts students', *ALAN Review*, 41:3, pp. 33–49.
- Davies, J. and Brember, I. (1993), 'Comics or stories? Differences in the reading attitudes and habits of girls and boys in years 2, 4, and 6', *Gender and Education*, 5:3, pp. 305–20.
- Edwards, B. (2008), 'Motivation and middle school readers: Graphic novels, comic books and free voluntary reading time', Ph.D. thesis, Department of Educational Psychology, Norman, OK: University of Oklahoma.
- Eriksson Barajas, K., Forsberg, C. and Wengström, Y. (2013), *Systematiska litteraturstudier i utbildningsvetenskap (Systematic Reviews in Education)*, Stockholm: Natur & Kultur.
- Frey, N. and Fisher, D. (eds) (2008), *Teaching Visual Literacy: Using Comic Books, Graphic Novels, Anime, Cartoons, and More to Develop Comprehension and Thinking Skills*, Thousand Oaks, CA: Corwin Press.
- Greenfield, D. (2017), 'Beyond super heroes and talking animals: Social justice in graphic novels in education', Ph.D. thesis, Malibu, CA: Graduate School of Education and Psychology, Pepperdine University.
- Greiffenhagen, C. (2013), 'Visual grammar in practice: Negotiating the arrangement of speech bubbles in storyboards', *Semiotica*, 195:1, pp. 127–67.
- Helsby, W. F. (1999), 'Comics in education: The link between visual and verbal literacy – How readers read comics', Ph.D. thesis, Faculty of Educational Studies, Southampton: University of Southampton.
- Huh, S. and Suh, Y.-M. (2018), 'Preparing elementary readers to be critical intercultural citizens through literacy education', *Language Teaching Research*, 22:5, pp. 532–51.

- Jennings, K. A., Rule, A. C. and Vander Zanden, S. M. (2014), 'Fifth graders' enjoyment, interest, and comprehension of graphic novels compared to heavily-illustrated and traditional novels', *International Electronic Journal of Elementary Education*, 6:2, pp. 257–74.
- Kerneza, M. and Kosir, K. (2016), 'Comics as a literary-didactic method and their use for reducing gender differences in reading literacy at the primary level of education', *CEPS Journal*, 6:2, pp. 125–49.
- Kuhlman, W. D. and Danielson, K. E. (2010), 'Incorporating graphic novels in elementary classrooms', *The Dragon Lode*, 28:2, pp. 55–62.
- Lam Toh, T., Pien Cheng, L., Tin Ho, S., Jiang, H. and Ming Lim, K. (2017), 'Use of comics to enhance students' learning for the development of the twenty-first century competencies in the mathematics classroom', *Asia Pacific Journal of Education*, 37:4, pp. 437–52.
- Lapp, D., Wolsey, T. D., Fisher, D. and Frey, N. ([2011] 2012), 'Graphic novels: What elementary teachers think about their instructional value', *Journal of Education*, 192:1, pp. 23–35.
- Laycock, D. (2007), 'Going graphic: Using graphic novels to engage boys in school reading', *Access*, 21:1, pp. 13–7.
- Lazzarich, M. (2013), 'Comic strip humour and empathy as methodological instruments in teaching', *Croatian Journal of Education – Hrvatski Casopis Za Odgoj I Obrazovanje*, 15:1, pp. 153–89.
- Leander, K. and Boldt, G. (2012), 'Rereading "A pedagogy of multiliteracies": Bodies, texts, and emergence', *Journal of Literacy Research*, 45:1, pp. 22–46.
- Lin, S.-F. and Lin, H.-S. (2016), 'Learning nanotechnology with texts and comics: The impacts on students of different achievement levels', *International Journal of Science Education*, 38:8, pp. 1373–91.
- Mallia, G. (2007), 'Learning from the sequence: The use of comics in instruction', *ImageText: Interdisciplinary Comics Studies*, Special Issue: 'Comics & Childhood', 3:3, [http://imagetext.english.ufl.edu/archives/v3\\_3/mallia/](http://imagetext.english.ufl.edu/archives/v3_3/mallia/). Accessed 18 June 2020.
- Millard, E. and Marsh, J. (2001), 'Sending Minnie the Minx home: Comics and reading choices', *Cambridge Journal of Education*, 31:1, pp. 25–38.
- Moeller, R. A. (2011), '"Aren't these boy books?": High school students' readings of gender in graphic novels', *Journal of Adolescent & Adult Literacy*, 54:7, pp. 476–84.
- Moeller, R. A. (2016), 'A question of legitimacy: Graphic novel reading as "real" reading', *Journal of Adolescent & Adult Literacy*, 59:6, pp. 709–17.
- Nesmith, S., Cooper, S. and Schwarz, G. (2011), 'Exploring graphic novels for elementary science and mathematics', *School Library Media Research*, 14:1, pp. 3–19.
- Norton, B. (2003), 'The motivating power of comic books: Insights from Archie Comics readers', *Reading Teacher*, 57:2, pp. 140–47.

- Özdemir, E. (2017), 'Humor in elementary science: Development and evaluation of comic strips about sound', *International Electronic Journal of Elementary Education*, 9:4, pp. 837–50.
- Pantaleo, S. (2011a), 'Grade 7 students reading graphic novels: "You need to do a lot of thinking"', *English in Education*, 45:2, pp. 113–31.
- Pantaleo, S. (2011b), 'Warning: A grade 7 student disrupts narrative boundaries', *Journal of Literacy Research*, 43:1, pp. 39–67.
- Pantaleo, S. (2012), 'Middle-school students reading and creating multimodal texts: A case study', *Education 3-13*, 40:3, pp. 295–314.
- Pantaleo, S. (2013a), 'Matters of design and visual literacy: One middle years student's multimodal artifact', *Journal of Research in Childhood Education*, 27:3, pp. 351–76.
- Pantaleo, S. (2013b), 'Paneling "matters" in elementary students' graphic narratives', *Literacy Research and Instruction*, 52:2, pp. 150–71.
- Pantaleo, S. (2014), 'Reading images in graphic novels: Taking students to a "greater thinking level"', *English in Australia*, 49:1, pp. 38–51.
- Pantaleo, S. (2015), 'Exploring the intentionality of design in the graphic narrative of one middle-years student', *Journal of Graphic Novels and Comics*, 6:4, pp. 398–418.
- Pantaleo, S. (2018), 'Elementary students' meaning-making of graphic novels', *Language and Education*, 32:3, pp. 242–56.
- Pantaleo, S. and Bombphray, A. (2011), 'Exploring grade 7 students' written responses to Shaun Tan's *The Arrival*', *Changing English*, 18:2, pp. 173–85.
- Potter, J. (2010), 'Discursive psychology and the study of naturally occurring talk', in D. Silverman (ed.), *Qualitative Analysis: Issues of Theory and Method*, London: Sage, pp. 187–207.
- Ranker, J. (2007), 'Using comic books as read-alouds: Insights on reading instruction from an English as a second language classroom', *Reading Teacher*, 61:4, pp. 296–305.
- Ranker, J. (2014), 'The role of semiotic resource complexes in emergent multimodal reading processes: Insights from a young student's reading of a comic book', *Australian Journal of Language and Literacy*, 37:3, pp. 151–60.
- Rule, A. C. and Auge, J. (2005), 'Using humorous cartoons to teach mineral and rock concepts in sixth grade science class', *Journal of Geoscience Education*, 53:5, pp. 548–58.
- Sharpe, J. and Izadkhan, Y. O. (2014), 'Use of comic strips in teaching earthquakes to kindergarten children', *Disaster Prevention and Management*, 23:2, pp. 138–56.
- Spiegel, A., McQuillan, J., Halpin, P., Matuk, C. and Diamond, J. (2013), 'Engaging teenagers with science through comics', *Research in Science Education*, 43:1, pp. 2309–26.
- Tavaglia, T. C. (1974), 'Resolving research controversy through empirical cumulation', *Sociological Methods & Research*, 2:4, pp. 395–407.



- Tilley, C. L. and Weiner, R. G. (2017), 'Teaching and learning with comics', in F. Bramlett, R. T. Cook and A. Meskin (eds), *The Routledge Companion to Comics*, New York and London: Routledge, pp. 358–66.
- Torgerson, C. (2003), *Systematic Reviews*, London: Continuum.
- Tsai, Y. -S. (2015), 'Young British readers' engagement with manga', Ph.D. thesis, Faculty of Education, Cambridge: University of Cambridge.
- Ujii, J. and Krashen, S. D. (1996), 'Comic book reading, reading enjoyment, and pleasure reading among middle class and chapter I middle school students', *Reading Improvement*, 33:1, pp. 51–4.
- Wallner, L. (2017a), 'Framing education: Doing comics literacy in the classroom', Ph.D. thesis, Department of Social and Welfare Studies, Linköping: Linköping University.
- Wallner, L. (2017b), 'Speak of the bubble: Constructing comic book bubbles as literary devices in a primary school classroom', *Journal of Graphic Novels and Comics*, 8:2, pp. 173–92.
- Wallner, L. (2019), 'Gutter talk: Co-constructing narratives using comics in the classroom', *Scandinavian Journal of Educational Research*, 63:6, pp. 819–38.
- Weitkamp, E. and Burnet, F. (2007), 'The chemedian brings laughter to the chemistry classroom', *International Journal of Science Education*, 29:15, pp. 1911–29.
- Witty, P. (1941a), 'Children's interest in reading the comics', *The Journal of Experimental Education*, 10:2, pp. 100–4.
- Witty, P. (1941b), 'Reading the comics: A comparative study', *The Journal of Experimental Education*, 10:2, pp. 105–9.
- Worthy, J., Moorman, M. and Turner, M. (1999), 'What Johnny likes to read is hard to find in school', *Reading Research Quarterly*, 34:1, pp. 12–27.

### Suggested citation

Wallner, Lars and Barajas, Katarina Eriksson (2020), 'Using comics and graphic novels in K-9 education: An integrative research review', *Studies in Comics*, 11:1, pp. 37–54, doi: [https://doi.org/10.1386/stic\\_00014\\_1](https://doi.org/10.1386/stic_00014_1)

### Contributor details

Lars Wallner is a post-doctoral research fellow in pedagogy and didactics, and an upper secondary school teacher of English, religion and philosophy. His research is on the use of fiction in educational practices, within education at all levels. His doctoral thesis, 'Framing education', shows how comics can be used in educational interaction to construct comics literacy in the primary and secondary school classroom.

Contact: Department of Behavioural Sciences and Learning, Linköping University, SE-581 83 Linköping, Sweden.

E-mail: lars.wallner@liu.se

 <https://orcid.org/0000-0002-6922-4294>

Katarina Eriksson Barajas is a professor of pedagogy and didactics. Her research mainly focuses on conversation around books, theatre and film, where she applies a discursive psychology approach to explore fiction in everyday life. In this way, she specializes in fiction as a didactic tool. Her research also includes higher education and gender.

Contact: Department of Behavioural Sciences and Learning, Linköping University, SE-581 83 Linköping, Sweden.

 <https://orcid.org/0000-0003-2822-4789>

Lars Wallner and Katarina Eriksson Barajas have asserted their right under the Copyright, Designs and Patents Act, 1988, to be identified as the author of this work in the format that was submitted to Intellect Ltd.

---