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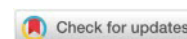
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Inter-Faculty Cooperation in English Language Teaching Using Educational Comic Strips on Geoforensics – A Pilot Study

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Abstract: The paper deals with the research and promotion of inter-faculty cooperation in the field of foreign language teaching. By focusing on educational comic strips as an underutilised language strategy at university level, we have tried to reduce or completely eliminate the tensions and uncertainties that accompany the learning or teaching of a new academic field. The study explores how a particular narrative from geoforensic practice is transformed into adapted educational comic strips. The focus then turns to the application of educational comic strips in language classes, and how six lecturers at two different faculties and their students in the first year of study perceive that application and respond to the challenges of teaching/learning in this way. Two surveys were conducted in order to obtain more precise data on the quality of the comic strips as a teaching/learning activity: the former, a qualitative survey of lecturers, and the latter, a quantitative survey of students. The results of the research indicate that even when the area of exploration such as geoforensics and comic strips is somewhat unknown for both teachers and students, the authenticity of material, the quality of preparation, the conscious and explicit participation of all sides, all potentially lead to new forms of good practice and positive linguistic outcomes.

Keywords: inter-faculty cooperation, educational comic strips, English language, geoforensics.

Introduction

In order for teaching to be good, it is necessary to use good strategies and activities. However, strategies and activities alone do not constitute good teaching per se. We know that the value of teaching rests on routine, experience, personal development and constant re-examination. However, when it comes to interdisciplinary areas, in order for successful teaching to take place, it is our firm belief that it is necessary that the teacher or teachers combine their own classroom experience with the experience of teachers with the same practice and develop a new combination of experience, informed thinking and openness to change. It is then a path towards a higher order of routine, growth, monitoring and professional judgment.

Higher education has induced new fields of cooperation and new ways of teaching that enable students to cross the boundaries of their academy in an easy and meaningful way. The growing literature has offered concepts of collaborative and intercultural learning, along with interdisciplinary concepts, using theorists with a wide range of expertise all of whom have commented and written extensively on utilization of educational comic strips as a form of innovative and yet-to-be fully incorporated in an ELT classroom (Britton, 1970; Apostel et al., 1972; Klein, 1990, 1996; Kline, 1995; Aram, 2004; Schmidt, 2008, 2011; Krohn, 2010; Frodeman, 2010; Killick, 2012; Parr, 2012; Parr, 2012; Maki, 2016; Seddon, 2016; Townsin and Walsh, 2016).

It is notable from our experience that higher education institutions rarely promote inter-faculty cooperation within the same country in the field of foreign language as an educational challenge. The common practice of teaching the same foreign language activity at two completely different faculties – in our case two universities (the University of Criminal Investigation and Police Studies and the University of Belgrade, Faculty of Mining and Geology) – is a situation where the heterogeneity of lecturers, students and teaching materials may potentially lead to tension and uncertainty (Bammer 2013: 100). Our initial

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attempt is to design such teaching materials that will enable our language teachers and students to communicate across academic disciplines in an inexhaustible and generative way. Our goal is to test the range of innovative activities focusing on the application of the comic strip in a language learning classroom in order to develop the best possible teaching quality, exchange our knowledge and experience, develop an even distribution of knowledge and practice in this field and to rely on programs which do not involve movement across national borders but the movement of institutions into an affiliated educational system 'at home'.

Inter-faculty cooperation: geoforensics and criminal studies

The progress of forensic science began dramatically with the popularity of television series in the 1990s (CSI, Silent Witness, etc.). Their popularity has also influenced the growing interest in educational programs in which young people could potentially pursue their careers in academic programs related to the study of forensics or geoforensics mimicking their favourite actors on television. Since forensics has become a part of everyday speech today, it can be said that forensic scientists are crucial in providing scientific evidence in criminal and civil investigations. Although forensic scientists use a number of scientific techniques to investigate and determine even the smallest details, geoforensic scientists are the only experts who can properly detect materials of geological origin. Thus, geologists are often asked to transfer or communicate results, advice and recommendations from their geological exploration to different recipients, such as the police, politicians, policy makers, the public, the media, and the judiciary. For this reason, it is of central importance for them to avoid the failure to communicate their message precisely, accurately and clearly. According to Donnelly "if the correct message is not conveyed properly, or is misunderstood, or misinterpreted, the consequences can be catastrophic" (Donnelly, 2008: 1). It is noted that for geologists the communication of information can be more difficult than the investigation itself. This is because many of these investigations apply highly sophisticated scientific techniques, geological terminology and specific technical jargon that – when combined with the cultural and language barriers, social, political, religious and economic constraints that often exist – put a geologist in a very difficult position. In other words, conveying the geological data for the recipient to understand means translating it into many 'Englishes' or sublanguages that exist within the multi-layered social strata. Thus, bearing this in mind, the comic strip may be used as an activity created to mimic the real-life situations in which a geologist may find himself and mitigate the initial encounter with something perceived as unknown language-wise.

Materials and Methods

This research study focuses on the assumption of applicability of educational comic strips at two faculties, as well as on summarizing the first results of this collaborative approach from two perspectives – the teachers' perspective and the students' perspective. From the point of view of language, work on comic strips should shed light on possible forms of vocabulary work as well as communicative skills exercises. It is assumed that the respondents, both the teachers and the students, will show openness and understanding for the new form of work in order to be able to adequately adapt to the newly set goals of innovation. When it comes to inter-faculty cooperation, we assume that the respondents will show readiness to cooperate, openness to improving the work on comic strips through suggestions, personal experiences and understanding of all the novelties that learning situations bring about.

Although it is not common to use different instruments in a single study, we have decided in favour of two different kinds of research – a qualitative for teachers and a quantitative for students – since the latter is considered more appropriate for the first-year students. With this in mind, the following hypotheses were set:

Hypothesis 1 postulates that, as educational comic strips contain two forms of expression, artistic and verbal, they can effectively engage students in active reading and thinking.

Hypothesis 2 postulates that learning vocabulary and communication is more entertaining and beneficial for adult students when it is based on educational comic strip material.

Hypothesis 3 postulates that comic strips can refresh communication skills and improve science literacy when operated via inter-faculty cooperation.

In order to be able to participate in this study, both the teachers and students had to be familiar with educational comic strip as one type of teaching material. The particular comic strip which was used in class before giving the questionnaires to teachers and students is given hereinbelow. This comic strip was

created by one of the teachers and was used in class with the students at both universities. Therefore, both the teachers and the students who participated in this study were familiar with the teaching material.

Geology Mystery Files: The Case of Pollen Helping to Solve a Murder

Source: https://www.lsu.edu/science/geology/news/current_news/2015/babydoe.php

What started as a nice summer walk for one Massachusetts lady and her dog on 25 June, 2015, turned into the beginning of an investigation into the dreadful murder of a two-year-old. After the lady's dog sniffed a plastic bag and the woman discovered the remains of an unrecognisable toddler, she immediately called the police.

The child was badly decomposed and bloated, but the autopsy didn't reveal any signs of injury. Due to the body's long exposure to water, the police were unable to collect the girl's fingerprints and identify her. They started calling her Baby Doe.

The police made various efforts to find out who Baby Doe was and what had happened to her. They combed through the missing children's database, conducted many tests for toxins, cleaning materials, drugs, and alcohol in the girl's body, and eventually managed to reconstruct a photo of the victim.

That's where the geoforensics team joined the investigation. Dr Andrew Laurence, an experienced palynologist, and his student assistant, Shannon Ferguson, carefully searched the girl's hair and clothes for any signs of pollen and other forensic clues about the girl's location before she was dumped in the garbage.

Dr Laurence and Ferguson conducted a chemical processing to isolate pollen grains and examine them. They found traces of pine, soot, and some rare pollen types in all samples, which helped them determine the girl had spent time near Boston prior to her murder.

The discovery didn't pinpoint the killer, but it greatly helped the police narrow down their search and increase search efforts in the area. They released the computer-generated image of the girl to the local public and soon received many calls with sometimes helpful leads.

The most helpful clue came from a person called Michael Sprinsky in September 2015. He told the police his friend, Rachelle Bond, confessed to him that her boyfriend killed her daughter, Bella Bond, who turned out to be "Baby Doe".

The mother and her boyfriend, both drug users, were charged with the murder of Bella Bond and were found guilty two years later.

Figure 1. Example of a geoforensic text

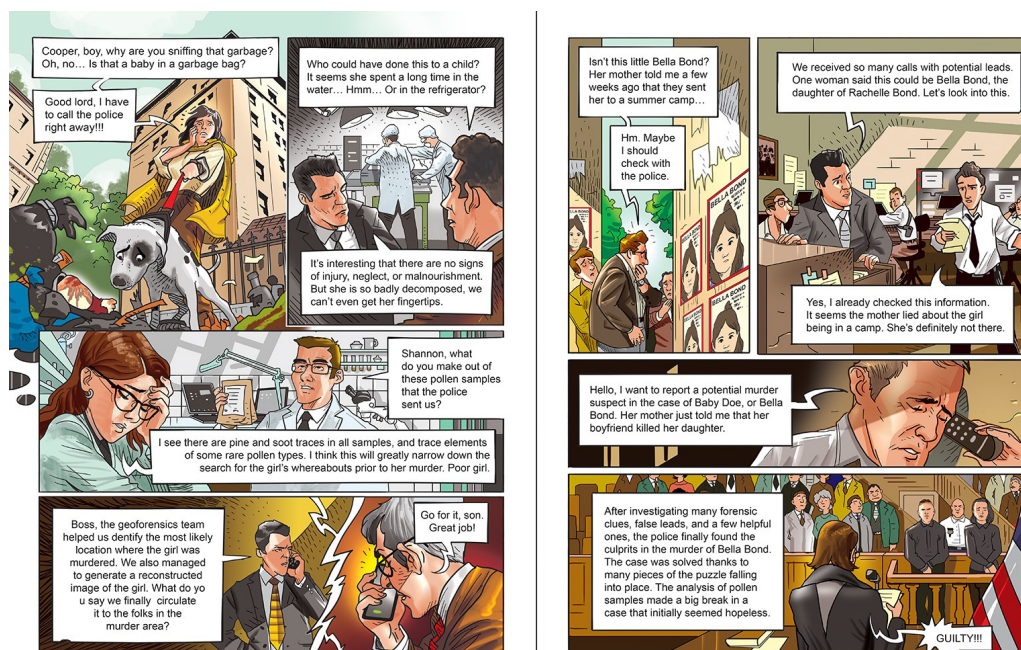


Figure 2. Example of a comic strip used in a language classroom

Research sample no. 1 - Teachers

The first part of the study – the qualitative study – included six language professors at two different faculties, with a total of 205 years of experience between them. The average length of service of the respondents is slightly over 29 years, which implies maturity, practice and enthusiasm. Apart from work experience, further background information is that all respondents have either active or passive knowledge of at least two more foreign languages and that two professors are also court interpreters.

Instrument no. 1

The purposely designed open-ended questionnaire used with teachers in this study comprised two parts, the first consisted of six questions and the second involved one table. The questions were connected with the above-mentioned hypotheses, and the suitability of comic strips in language teaching via innovative language activities. By using a qualitative content analysis, core beliefs and experiences were identified. The questionnaire was anonymous, with no time and length limits, which contributed to the validity of the study as professors gave honest and comprehensive answers.

Results of the qualitative study

1. Question – To what extent do you think that the use of educational comic strips is a useful educational activity in the dual learning of English and geoforensics?

“I think that the use of comic strips in general and educational comic strips in particular, is very useful. Above all, I think it is very difficult for current generations to read longer texts because they are used to shorter text messages combined with auditory or visual content.”

“I believe that any quality and innovative activity that is not related to classical learning with a textbook and notebook encourages learning a foreign language, including the specific language and jargon of the given profession.”

“Through this approach, students have the opportunity to simultaneously master professional terminology in English and their mother tongue. We often witness that, in the absence of adequate knowledge or adequate translations of foreign professional terms, we get naturalised versions of English terms, which greatly harms the mother tongue.”

2. Question – To what extent do you think that educational comic strips contribute to scientific and rational thinking?

“This comic strip specifically relates to pollen sample analysis, which students should be familiar with from another subject, so the comic strip really encourages thinking and the use of previously acquired knowledge from another academic field.”

“Like other teaching materials, educational comics will have a stimulating effect on some students, while others may remain indifferent or may even consider it inadequate, unserious, and uninteresting, and this is an observation from personal experience. It happened to me that one group of students accepted innovative educational material with enthusiasm, while another even resented it, despite being students of the same generation at the same faculty.”

“Since the comic strip illustrates a situation from real life, with possible real dialogues, students are given the opportunity to anticipate the development of the situation while reading the comic strip and think about possible conclusions based on the data they have at the moment.”

3. Question – To what extent do you think educational comic strips contribute to vocabulary learning?

“Comic strips as a form are not very rich in text, so the text that they do contain can be a good basis for students to create additional content, which absolutely expands the knowledge of vocabulary.”

“Educational comic strips facilitate the acquisition of vocabulary because the verbal content is accompanied by an illustration, so that it is memorised faster and more permanently.”

“To a large extent – the very concept of comic strips, in which students must actively participate in the creation of content, encourages participants to look for new, adequate words and terms that are appropriate in a given context. At the same time, modern technology (using online dictionaries) should be available to them.”

“It is known that vocabulary is best learned through fun and interesting teaching content, which this comic certainly is. Thus, a very subtle introduction of new vocabulary, as here, gives the student the opportunity to understand the meaning of new words from the context, create their own associations and thus better ensure word memory.”

4. Question – In your opinion, which communication strategies do you think educational comic strips encourage?

Here, the answers can be summed up as follows: asking questions is a very important communicative strategy at all times: a) first of all it implies feeling free to ask questions if something is not clear about the task, b) and then enquiring about the content of the comic strip, unknown words, etc. In the exercise of filling in the missing parts, students are expected to present their ideas to colleagues and the professor openly and logically. This additionally encourages interpersonal communication which is ideal for group or pair work. In this way, listening to and respecting the opinions of other students is properly conducted. Public speaking skills encourage students to speak clearly, and to feel free to address the audience in a more than one way. Interview skills help students learn to ask adequate and concise questions related

to a given topic. Persuasion skills enable students working in a group or pair to correct each other by making them see the situation differently. Analytical and logical presentation skills are greatly improved by the comic strip, because it instructs students to analyse drawings, interpret them, follow the sequence of events and present the content in a logical order.

5. Question – In your opinion, how often should an educational comic strip be used in teaching?

“Not too often, because any exercise that is overexploited becomes boring. The recommendation might be to use it more often in lessons or areas that are difficult for students, so that the content can be presented through comics in a more acceptable way to learn.”

“The answer cannot be given precisely, because it depends on many parameters. First, it depends on the total number of hours of a language course, and then on how students react to this form of work. Perhaps it is best to find a balance in such a way that out of the total number of topics, only a certain number would be processed in this way, with the choice falling on those topics that are more difficult for students.”

“Any kind of audio-visual stimulus is welcome in foreign language teaching, and should be a more common practice in classes (depending on the technical possibilities in the classroom).”

6. Question – To what extent do you think that this type of inter-faculty cooperation is useful?

“This type of cooperation is a great way to exchange ideas, and maybe to encourage some of us who may not have dared to start creating some similar material.”

“Based on personal experience, I can say that some teachers see themselves exclusively as ‘reproducibles’ and do not want to try their hand at creating teaching materials.”

“This is a good example of the synergy of two educational institutions whose goal is to encourage the learning of the language for specific purposes in a more effective way.”

“This kind of cooperation would greatly help language teachers and keep them up to date with current trends and thus give students the up-to-the-minute terms and expressions.”

As mentioned earlier, the following table is a part of the research in which the participants were invited to suggest exercises that they thought could be used with an educational comic strip. Their responses were summed up in Table 1 as follows:

Table 1
Activities suggested by the participants

1.	Both texts are read in order to gain a sense of narrative and image.
2.	Speech bubbles have been erased in the comic, and students fill them in based on the text.
3.	In the text, some sentences or parts of sentences have been deleted and students try to complete them on the basis of the comic strip.
4.	Students alternately fill in either text or comics.
5.	Students create a small thesis report.
6.	Students present a chronological sequence of events (police or geological perception).
7.	A role-play activity related to some specific situations.
8.	The role-play activity can be realised in the following class, in order to give students the opportunity to prepare to ‘act out’ the text (diction, correct pronunciation of key words, etc.). This can also allow students to adapt the ‘script’ and insert some details (new characters) that are not in the comics (while following the plot and not disturbing the logical sequence of events) so that in a larger group, more students can be involved in this activity.
9.	Presentation of evidence by geoforensic scientists in court
10.	Students may be asked to devise a different outcome or to complete a comic strip (if we omit the last picture or the last couple of pictures).
11.	Word formation exercise based on the text of the comic strip.

Discussion of the teachers' answers

The first hypothesis was related to the suitability of educational comic strips based on geoforensics as a new scientific field and it encompassed questions 1 and 2. Based on the fact that comics can reduce the cognitive load associated with complex reasoning because they can present important information in a simpler and more symbolic way than equivalent academic texts, the researchers concluded that the use of comic strips can significantly improve foreign language teaching in the following way: illustrations are easier to process than the text; texts provide a wide variety of real life examples; innovative activities are preferred to routine tasks. According to this logic, illustrations facilitate the creation of mental models and help with understanding the complexity of both content and linguistics.

The second hypothesis pertained to the acquisition of vocabulary and improvement of communication skills and it comprised questions 3 and 4. The results of the research suggest that comic strips are stimulating in a multitude of ways, but above all through active participation and critical and creative speaking. Experienced teachers who have tried this method with students find that it brings remarkable progress if the students are introduced into a kind of input-output circle, otherwise the impact of comic strips is limited. In other words, our idea is to minimise the stereotypical teaching of science and language, and at the same time use multidisciplinary teaching as much as possible, but the measure of success will greatly depend on the cultural habits of our students as lovers of comic strip art.

The third hypothesis, which deals with cooperation between two faculties, involves questions 5 and 6. The results of this research suggest, but do not fully prove, that the effects of educational comic strips are welcomed, that they provide powerful motivation for professors to establish themselves as teacher-researchers. The acceptance of cooperation is clearly demonstrated in the willingness to mutually design appropriate activities that can be improvised around the text and comics in order to develop all of the students' linguistic abilities. Equally important is that by means of innovative comic strips students' overall scientific literacy can be improved in an unpressured and spontaneous way.

Research sample no. 2 - Students

The second part of the study included 44 student respondents in this survey, 35 from the Faculty of Mining and Geology and nine from the University of Criminal Investigation and Police Studies. Respondents have mainly three levels of English language proficiency, from B1 to C1. Consequently, it is assumed that respondents will have an unequal evaluation when it comes to the application of new forms of language learning.

Instrument no. 2

A special closed-ended questionnaire was used, which included six questions, two for each hypothesis. A Likert scale with values (1) strongly disagree; (2) disagree; (3) neither agree nor disagree; (4) agree; (5) strongly agree was used. The questionnaire was anonymous in order to contribute fully to the validity of the study. Students were given 30 minutes to complete the questionnaire which was offered to them in November, 2021. Students were instructed to make their answers as precise as possible which is crucial for the success of the study. The questionnaire and the summary of students' answers are given in Table 2 below.

Table 2
Questionnaire and summary of students' answers

Questions	1 (Strongly disagree)	2 (Disagree)	3 (Neither agree nor disagree)	4 (Agree)	5 (Strongly agree)
1 The educational comic is a useful reading resource.	4 (9.1%)	6 (13.6%)	9 (20.5%)	12 (27.3%)	13 (29.5%)
2 The examples in the comics are easy to remember.	5 (11.4%)	4 (9.1%)	12 (27.3%)	14 (31.8%)	9 (20.5%)
3 The educational comic is inspiring in exploring alternative opinions.	5 (11.4%)	4 (9.1%)	8 (18.2%)	10 (22.7%)	17 (38.6%)
4 The educational comic brings new opportunities for discussion and debate.	5 (11.4%)	3 (6.8%)	5 (11.4%)	18 (40.9%)	13 (29.5%)
5 The educational comic is a multidisciplinary narrative.	2 (4.5%)	3 (6.8%)	11 (25%)	10 (22.7%)	18 (40.9%)
6 The educational comic can refresh class work.	5 (11.4%)	2 (4.5%)	7 (15.9%)	11 (25%)	19 (43.2%)

Results

The students evaluated reading in this way: a large number of students (question 1: 29.5% strongly agree and 27.3% agree, referring to the usefulness of reading criminal stories along with scientific comic strips) answered in favour of the benefits of reading. The development of this concept carries the risk that freshmen students are unreflective receivers very often prone to manipulation and exposed to hateful speech and offensive behaviour when it comes to crime stories.

As for question 2, referring to the ease of remembering, 52.3% of the students either strongly agree or agree that texts and illustrations provide motivational and engaging stimuli for reading.

The answers to questions number 3 and 4 respectively (in the former 61.3% either agree or strongly agree, and in the latter 70.4% either agree or strongly agree) suggest that students find comic strips a good basis for discussion and debate which at the same time offers the possibility to look for alternative opinions.

The answers to questions 5 and 6 are also prevalingly positive (for the former 63.6% either strongly agree or agree, and for the latter 68.2% either strongly agree or agree), in other words students like this multidisciplinary narrative and find it refreshing in a classroom.

Discussion

Based on the overall results of the study, the researchers concluded that the use of educational comic strips has the potential to significantly improve the foreign language learning repertoire. Educational comic strips can reduce cognitive load via illustrations and simplified narrative, while remaining useful to read.

The offered texts may afford learners the chance to discover the possibility of safe reading with a wide variety of styles, facilitating them to recognise the scientific, ideological, and professional aspects of the given narratives, and shielding them from being spoonfed with information by dubious entities. Additionally, geoforensics and criminal stories combined with comic strips encourage learners to take control of their reading, gain different academic and practical perspectives on life and professions, and deepen their understanding of an ethical approach. Therefore, the first hypothesis that comic strips can effectively engage students in active reading and thinking (as they contain both artistic and verbal forms of expression) has been confirmed.

When it comes to the second hypothesis pertaining to the more enjoyable learning of language and communication via educational comic strips, students assessed (within questions 3 and 4) that real

life examples adequately serve the purpose of work-place-related language based on their needs and expectations. The brevity of the extracts is decisive as short passages both teach the language and educate students to develop as global citizens as they can easily communicate the attained vocabulary, since learning vocabulary is not only about training, but also requires the application of what is learnt.

Lastly, when it comes to the third hypothesis which encompasses question 5 and 6, the students evaluated positively both of the assumed aspects of refreshing English classes via educational comic strips and improving literacy by means of interdisciplinary and interfaculty cooperation. Even though such interdisciplinary and inter-faculty goals and practice are not prominent in ESP, we try quite naturally and rightly to encourage the use of texts and educational tools and techniques that address students' professional and academic areas of interest. The attempted model of teaching and learning that is offered in this research addresses the suitability and ways of integrating not only real-life cases and stories, but also different genres and registers that are likely to contain subject matter with the potential to appeal to workplace-oriented students.

Conclusion

The research published in this paper dealt with issues related to the use of educational comic strips based on geoforensics in English language teaching at two different faculties. Starting from the assumption that real-life stories and authentic cases can be motivating and engaging, broadly expanding students' cultural, academic and professional context, the educational effects of educational comic strips are yet to be explored in specialised language teaching.

The results of this small-scale pilot study obtained by applying a qualitative survey for teachers, and a quantitative survey for students, confirmed the initial three hypotheses regarding educational comic strips: the first related to their suitability in effectively engaging students in reading and thinking; the second to their adequacy in enhancing students' language and communicative skills; the third to refresh learning/teaching by means of innovative teaching materials. The respondents showed positive attitudes, openness, adaptability and curiosity in a potentially unknown and insufficiently researched form of work. While the teachers perceived new functions of stories and real-life worlds within the classroom to be further developed, the students showed readiness to cooperate in the areas where science, logical reasoning, artistic imagery and intercultural issues play a role.

Although inter-faculty interaction seems fragile and challenging with heterogeneous educational disciplines, an attempt has been made to create a common repertoire of practice and educational resources that will potentially allow for further enriched learning and teaching, starting with the application and utilization of the comic strip. We believe that artifacts that have been produced on this occasion and by which individuals contribute to the work they are engaged in are key to the interconnection of higher education professionals with similar expertise.

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Conflict of interests

The authors declare no conflict of interest.

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