WIKIPEDIA PROJECT TO TEACH ACADEMIC WRITING IN AN EAP UNIVERSITY COURSE

Joseph Jack Horgan

Latvia University of Life Sciences and Technologies, Latvia

Abstract. The introduction of modern information and communication technologies (ICT) into the classroom has led to a number of challenges and opportunities for instructors across the field of education. Wikipedia, a collaborative encyclopedia, has proven to be one of the most controversial online platforms throughout academia, with many higher education instructors banning its use outright. Despite the prevailing negative attitude, there has been a recent shift in thought among some in the field regarding its utilization as a teaching tool in a number of applications. One popular use is as the centre of a writing project, most commonly the creation of a new article or the improvement of a pre-existing one.

This paper outlines a case study conducted at the Latvia University of Life Sciences and Technologies in the autumn semester of 2019, in which first year international veterinarian medicine students wrote Wikipedia articles as part of a semester-long project in an English for academic purposes course in order to improve academic writing skills such as researching, analysing, summarizing, and editing. Analysis of two questionnaires and the students' work suggest that despite some challenges, a Wikipedia article writing project can serve as an engaging, rewarding, and effective method to teach academic writing skills.

Keywords: Academic English, EAP, Wikipedia.

Introduction

In the nearly twenty years since its original launch in 2001, Wikipedia has become one of the most controversial websites throughout academia. Critics of the so-called "open encyclopedia" have bemoaned increasing student reliance on it as a source of information at the expense of more "reliable" sources that have gone through rigorous peer-review processes and are not able to be edited at will by any given person at any given time. One study (Bould, Hladkowicz, Pigford, Ufholz, Postonogova, Shin, & Boet, 2014) even found that as of 2012, the number of Wikipedia citations in peer reviewed health science literature had increased each year since 2004, with the exception of the period between 2009 and 2010, with 1433 articles having cited Wikipedia 2049 times in total. Some instructors have gone as far as banning Wikipedia outright (Cohen, 2007), and even

Wikipedia's own founder Jimmy Wales has warned against citing its articles as a reliable source of information (Orlowski, 2006).

On the other hand, as the integration of information communication technologies (ICT) in the classroom becomes an ever more unavoidable reality, a growing number of educators have increasingly been finding value in embracing Wikipedia as a teaching tool in a number of ways. These can include asking students to analyse the content and writing style of articles, comparing and contrasting Wikipedia articles with other types of writing, using Wikipedia-related topics as the basis of debate or persuasive writing assignments, or learning about the way the encyclopedia is written in order to better understand it as a source of information (Kissling, 2011). One of its most popular classroom uses is as the basis of a writing assignment, specifically the creation of new articles or editing and improvement of low-quality ones that already exist. This method has been used by higher education instructors since at least 2003 (Wikipedia, n.d.), although there has been a growing amount of research in the past decade concerning its use by school and higher education instructors to teach writing.

The aim of the present research was to evaluate such a project's usefulness as a method of teaching academic writing to a group of international students in a veterinary medicine bachelor's study program at the Latvia University of Life Sciences and Technologies. A case study was conducted with 25 students in the program, with data collection methods including two questionnaires and qualitative analysis of students' final project work.

Wikipedia-based writing assignments

According to P. Konieczny, by 2006, over 20 different universities had listed Wikipedia-based assignments on the centralized "Wikipedia: School and university project" page that was created by Wikipedia users in July of 2003 (Wikipedia, n.d.) in order to help facilitate the website's use as a teaching tool (Konieczny, 2007). C.J. Chandler and A.S. Gregory published one of the firstknown studies that examined editing Wikipedia as the basis of a university writing assignment, designing a seven-week project for the students of their "History 232: The Rise of Islam" course, and finding that it successfully helped prepare students for university-level research, increased student's critical awareness when using Wikipedia as an information source, improved their ICT skills, and made them become "more educated and critically aware information consumers (Chandler & Gregory, 2010, p. 255). In the years since, a number of positive effects have been reported by researchers such as C.M. Tardy, who claimed that the assignment introduced her students to academic writing in an engaging way (Tardy, 2010), R. Farzan and R.E. Kraut, whose 640 university students "significantly" improved over 800 articles (Farzan & Kraut, 2013), J. Miller, whose students reported noticing improvement in their writing skills and enjoying the chance to write for an authentic audience (Miller, 2014), and M.A. Vetter, Z.J. McDowell and M. Stewart, whose survey of students participating in Wikipedia writing assignments found that participants thought the assignments to be more useful in improving critical thinking, source evaluation, public writing, and peer review skills than more traditional writing assignments (Vetter, McDowell, & Stewart, 2019).

Despite the numerous positives that have been reported, significant challenges have also been documented by researchers. Farzan and Kraut reported that certain students felt significant frustration after large amounts of their work were deleted by more experienced editors due to difficult-to-understand regulations and technicalities (Farzan & Kraut, 2013). Certain students in Miller's (2014) study complained that learning the technical aspects of publishing articles was time consuming and complicated. Instructors who are not already well-versed in Wikipedia might not find it worth investing the time necessary to become familiar enough with its technical aspects and content guidelines to be able to teach students how to use it as part of an assignment.

For their part, the American non-profit organization "Wikimedia Foundation" (WMF), which oversees Wikipedia and sister projects such as Wiktionary (a collaborative dictionary) and Wikimedia Commons (a repository of free-use media), have developed a number of resources and tools to both promote and support usage of the encyclopedia as an educational tool. In particular, the "Wiki Education" organization was created in 2010 as a spinoff of WMF to provide outreach to educators in the United States and Canada, offering services such as tutorials for both staff and students, help with instructional design, and a "dashboard" tool that allows instructors to manage students' assignments and track their contributions (Vetter et al., 2019). Although less resources are available for the rest of the world outside of North America, a version of the dashboard can be used by instructors and students in all countries.

Case study at the Latvia University of Life Sciences and Technologies

At the Latvia University of Life Sciences and Technologies, all veterinary medicine students are required to take one semester of professional English to prepare them for being able to use English in the veterinary medicine profession. However, this course was designed for local Latvian students who complete the rest of their studies in the Latvian language. When the university began accepting international students in fall of 2016, it was necessary to adapt this English course, as all of the students' other classes were to be in English and the course material as it had been designed for the Latvian students would be covered in much greater depth in the international students' other classes. Since these students would be

communicating in English throughout all of their studies and would eventually have to write their bachelor's papers in English as well, it was decided to refocus the class on "English for academic purposes." In order to teach academic writing skills in a meaningful and engaging way, it was decided to include a Wikipedia article writing project as part of the course curriculum.

In fall of 2019, a group of 25 international veterinary students from throughout Eurasia and northern Africa studying at the Latvia University of Life Sciences and Technologies took part in a semester-long Wikipedia article writing assignment as part of their "professional English" course. At the beginning of the course, eighteen of these students agreed to complete an anonymous questionnaire regarding previous experience and attitudes towards academic writing in English.

The first question regarded their previous educational experience, and the results showed that two thirds of the students had only completed secondary school, with two having completed a previous bachelor's degree, one having studied for a master's degree, one having obtained a master's degree, and two having completed other professional education. In terms of their self-reported English level according to the Common European Framework of Reference for Languages (CEFR), the majority (9/16) claimed to have "B2" (upper-intermediate) abilities, while 6 said they had "C1" (advanced) level English, two said they "B1" (intermediate) and one "C2" (proficiency) level. From the first two questions, it was already clear that this would be a mixed-ability group of students.

The next question asked about their previous instruction in academic writing in any language. Two thirds (12) reported that they had had learned about it in their native languages, while ten reported having learned about academic writing in English as a foreign or second language, one said that they learned about academic language in a non-native language other than English, and four said that they had not had any instruction in academic language whatsoever. The fourth question asked the students to indicate the perceived difficulty of different aspects of academic writing. The results can be seen in *Table 1*.

As can be seen, students expressed the most concern about analysis of sources, grammar usage, and planning time for long-term assignments. Somewhat surprisingly, the students reported that writing introductions, structuring their writing, and summarising information were the most relatively easy aspects of academic writing. This could be due to their prior instruction in both academic writing and writing in general having focused on these specific topics. Students were divided when it came to how difficult they believed it was to find reliable sources, format references and sources, and avoid plagiarism, likely once again due to the wide range of prior academic experience that the students had had.

Table 1 Perceived a	difficulty of	different	aspects of	f academic	writing for students
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	Very	Somewhat	Neutral	Somewhat	Very
	difficult	difficult	ricuttat	easy	easy
Writing introductions	0	0	6	11	1
Using proper academic style	1	4	8	5	0
Expressing ideas clearly	1	2	8	6	1
Structuring my writing	0	1	3	11	3
Linking sentences smoothly	0	2	5	9	1
Finding reliable sources	0	5	7	3	3
Analysing sources	0	6	6	5	1
Summarising information	0	1	6	9	2
Referring to sources in text	0	3	4	7	3
Revising and proofreading my work	1	5	8	2	2
Formatting references/sources	0	3	7	4	3
Using correct grammar	1	7	5	3	1
Planning my time for long assignments	2	5	5	6	0
Avoiding plagiarism	1	4	6	3	4

The final question asked students to rate their overall competence in English academic writing. Again, results varied, with more than half of the students (9/16) rating themselves as "somewhat competent," which was the middle option on the ranking scale. Only one student rated him or herself "very competent," while three rated themselves as "mostly competent," four as "mostly not competent," and one as "not at all competent."

With the class' abilities and attitudes towards academic writing having been determined by the questionnaire, the project itself needed to be developed. The assignment lasted throughout the entire four-month semester, with portions of nearly every lesson being devoted to certain aspects of either academic language in general or to Wikipedia in specific, such as evaluating sources of information, summarizing without plagiarizing, grammar and word choice, and others. The project was broken into smaller assignments throughout the semester which students had to complete on the course's online "Moodle" learning page.

The first assignment required students to select a topic. Since the course was designed for veterinary students, it was required to pick a topic that related to veterinary medicine in some way (diseases, organisms, researchers, ect). Students were encouraged to either find a topic that did not have a pre-existing page or to find a low-quality page that could be improved. The course instructor approved each topic individually, as the topic had to be one that fulfilled Wikipedia's "notability" requirements for inclusion in the encyclopedia. Wikipedia does not allow an editor's original research to be cited, so it was key that students ensured that enough sources existed to support the creation or improvement of an article. Once their topics were approved, they signed up for the course page on the

aforementioned "WMF outreach dashboard" that allowed the instructor to track the work that they did. It was required for students to set up a free Wikipedia account if they did not already have one.

The next assignments had to do with sources and summarizing. Students had to submit to the instructor three sources that met the criteria for being cited in an article, as well as a written explanation explaining why the sources were of high enough quality and relevant to the topic. The next week, students had to write a summary of information from one of those three articles that could theoretically be used in an article. After that, the instructor pointed out that most Wikipedia articles do not follow a single set template for the structure and organization of information, as each topic's scope is somewhat unique. Students were encouraged to analyse articles covering similar topics that had been identified as "good" or "featured," high honours for Wikipedia articles which can only be obtained after rigorous community-based peer review. They then had to submit preliminary outlines for their own articles based on the structures that they had observed in high-quality articles of similar topics, as well as the scope of information that they had so far found in their research. The outlines could be, and often were, updated later in the writing process.

It should also be noted that during one of the lessons at the beginning of the second month, students collaborated as a class to create a Wikipedia article for a music album that had recently been released, as there were plenty of reliable sources available. Students discussed and decided as a class what a logical outline of the article could be based on other high-quality articles about music albums, and they then spent the rest of the class filling out a shared Google Doc form that allowed them to add information to different sections as they found it, leaving the source of such information in comments. This prepared them for what would eventually be the next assignment, which was to submit a completed first draft of their article in Google doc form. During the next lesson, students spent the entire time reviewing and commenting on other students' work, as it was required to take peer feedback into account for the final draft.

The final assignment was completed in steps. One entire lesson was devoted to teaching how Wikipedia's editing system works, and assisting students in publishing their articles. Wikipedia does not allow new users to write their own new articles, so students with a topic that didn't yet have an article needed to first create a draft that could be submitted for review by an experienced Wikipedia editor. This allowed students to take their time in perfecting the content and formatting, as drafts can be saved repeatedly and for indefinite periods of time. On the other hand, students that were improving a pre-existing article could either publish their additions in bits and pieces or save the code of their articles in a text document and use it later. They were given an additional two weeks to continue working on their articles before the instructor would begin evaluating the work

that had been done. The "WMF outreach dashboard" allowed the instructor to see what work the students had done themselves, as it was possible that other outside editors could modify those pages as well, or even delete students' contributions.

In terms of assessing student work, the instructor modified a sample rubric provided by Wiki Education (Blumenthal & Wikipedia, 2018) in order to meet the needs of an English for academic purposes class. There were seventeen criteria grouped into four categories, with students able to score a maximum of three points in each and, 51 points in total. These criteria have been displayed in *Tables* 2-5 below, with the numbers in bold showing how many students scored "Excellent" (3 points), "Good" (2 points), "Fair" (1 point) and "Poor" (0 points).

		Excellent (3)	Good (2)	Fair (1)	Poor (0)
Lead	Introductory	States article	Topic of article	Begins with an	No lead
Section	sentence	topic	stated, though	introduction,	(1/25)
		concisely and	not	not a lead	
		accurately in a	concise/direct	(2/25)	
		single sentence	(1/25)		
		(21/25)			
	Summary	Summarizes all	Summarizes	Includes	Summary
		major	most major	excessive	missing,
		points in the	points, but	background	lacking key
		article	misses one or	information	ideas
		(6/25)	more important	(1/25)	(3/25)
			aspects (15/25)		
	Context	All	Includes some	Includes	Doesn't
		information	information	mostly	provide
		included is	not present in	information	enough
		also present in	body	not present in	information to
		body	of the article	the body of the	determine
		of the article	(13/25)	article	what the article
		(8/25)		(2/25)	is about (2/25)

Table 2 Grading rubric and results for the lead section

The "lead section" of a Wikipedia article functions similarly to an abstract of an academic work. It provides a brief overview of the entire article, and should summarize all major key points and sections without including any information that is not mentioned somewhere later in the article. Although most students succeeded at writing a suitable opening sentence (*Table 2*), many struggled in the rest of the lead section, with a majority of student failing to mention one of the article's key points and failing to mention information found in the abstract later in the article. Good abstract writing can be one of the most difficult parts of academic writing to master, so it is not particularly surprising that this was a section that students struggled with.

Table 3 Grading rubric and results for the main section

Article	Organization	Body is divided into relevant, logical sections that follow guidelines for topic - necessary infoboxes (16/25)	Body includes sections, but they aren't logically structured (7/25)	Article sections duplicate one-another, and/ or much content is irrelevent to the respective sections (1/25)	No sections, or sections organized poorly (1/25)
	Content	Comprehensive coverage of the topic (20/25)	Coverage is mostly comprehensive with some gaps (3/25)	Coverage has important gaps that make it difficult to follow (2/25)	Content irrelevent to the topic (0/25)
	Balance and Objectivity	Article presents balanced and objective coverage of the topic (23/25)	Article makes some subjective claims not backed by evidence of consensus (2/25)	Article makes many subjective claims not backed by evidence of consensus (0/25)	Article is biased, attempts to convince readers of a point of view (0/25)
	Relevence and Notability	All content is relevent to the article and the respective sections, and worthy of being included in Wikipedia (19/25)	Most content is relevent to the article and the respective sections, and/or most content is worth being included (6/25)	Much of the content is irrelevent to the article and the respective sections, and/or not worthy of being included (0/25)	Content is not sufficiently relevent to the subject matter or notable enough for inclusion on Wikipedia (0/25)

In terms of the articles' main sections (*Table 3*), the instructor was pleased that for the most part, students produced well-organized, quality content. All but two students had either "good" or "excellent" organization for their articles, showing that they were able to successfully analyse the structures of other articles and were not hampered by lack of a clearly prescribed format and set of strict conventions that academic writing assignments often come with. 20 students scored three points for "comprehensive" coverage of their topics, a somewhat subjective indicator considering that the nature of the assignment does not allow for a particular word requirement, as different topics require a different amount of writing to be considered "comprehensive." Nearly all students were able to write objectively. This is a favourable aspect of writing about topics such as medicine and science, as it is somewhat easier to write without bias than about

people, art, or politics-related topics. Most students also included only content that was deemed "relevant" and "notable," or, in other words, "worthy" of being included in an encyclopedia article.

Table 4 Grading rubric and results for references

References	Links	All related articles of importance are linked to in the text for background reference (9/25)	Most related articles of importance are linked to in the text for background reference (5/25)	Some related articles of importance are linked to in the text for background reference (2/25)	No in-text links (9/25)
	Citations	Every statement can easily be associated with a supporting reference (8/25)	A few statements in parts of some paragraphs have unclear sourcing (5/25)	Some unsourced paragraphs or sections (5/25)	Very few or no in-text citations (7/25)
	Sources	A diversity of the best available sources that are appropriate for the discipline/genre (10/25)	Article uses mostly good sources, but includes some lower-quality sources or overuses a few sources (9/25)	Article depends heavily on non-independent sources, or low-quality sources, or too few sources (3/25)	Article uses unreliable internet sources or no sources (3/25)
	Completeness	Most references include completely filled-out citation template or are otherwise complete (11/25)	Most references are fairly complete, but some are missing something (3/25)	References missing significant amounts of information (3/25)	No references, or just hyperlinks or titles (8/25)

Table 4 makes it clear that students had significantly more trouble finding, properly citing, and formatting sources of information for their writing. This is not surprising, as a number of students identified this as a challenging aspect of academic writing in their questionnaires. The "links" criterion refers to the links

to other relevant Wikipedia articles that can be found throughout a page. It is necessary to link to all relevant pages the first time a topic is mentioned in the lead section and then again in the main body, something students seemed unable to do despite its relatively low difficulty.

Table 5 Grading rubric and results for mechanics

Mechanics	Spelling Grammar	Few to no spelling errors (16/25) Minor errors in complex structures (3/25)	Some minor and major errors (8/25) Occasional grammar errors (15/25)	Consistent minor and major errors (1/25) Widespread grammar errors (6/25)	Obvious that spell check was not used (0/25) Sloppy, careless grammar (1/25)
	Register	Constant correct use of encyclopediatic tone and language (15/25)	A few instances of overly informal language (10/25)	Commonly overly conversational tone (0/25)	Completely inappropriate tone (0/25)
	Paraphrasing	All sources correctly paraphrased in student's own words (22/25)	Some summarizing too close to original language (2/25)	Language often isn't in the student's own words (0/25)	Most of article copied and pasted or source can't be traced (1/25)
	Editing	The final version makes full use of all suggestions and edits (18/25)	The final version makes use of many suggestions and edits (5/25)	The final version makes some use of suggestions and edits (1/25)	The final version is the same as the first draft (1/25)
	Formatting	No formatting errors (bolding, italics, headings, ect) (9/25)	A few minor formatting errors (9/25)	Widespread formatting errors (4/25)	Little to no attempt at proper formatting (3/25)

Finally, it was important to consider traditional aspects such as spelling, grammar, and register. As can be seen in *Table 5*, students seem to have had good reason to be worried about grammar, as this was a category that very few scored full points in. However, students were generally able to use the proper encyclopedic formal tone and language, with only isolated uses of overly conversational or informal language. Furthermore, students did an excellent job

of summarising sources in their own words and were able to avoid plagiarism concerns nearly altogether. Formatting errors were persistent throughout many students' work, but that was not surprising given the challenging nature of Wikipedia's formatting guidelines and systems.

At the end of the project, a final anonymous voluntary follow-up questionnaire was completed by twelve of the students who had participated in the project. Since it is impossible to know how many of these twelve answered the original questionnaire, there is no way to make a completely meaningful comparison between the results of the first and second. However, it is worth noting that this time, more than half of the students (7/12) reported feeling "mostly competent" at academic writing, with three feeling "somewhat competent," one feeling "very competent," and one feeling "mostly not competent."

In the questionnaire, students were also asked how useful the project was in improving the same fourteen academic writing skills mentioned in the first questionnaire. As can be seen in *Table 6*, an overwhelming majority of students reported that the project was at least "somewhat useful" in improving all of the skills with the exception of time management, with the highest perceived levels of usefulness related to finding reliable sources, using proper academic style, analysing sources, and referring to sources in text. Although students scored well on the assignment in categories related to the first three of those aspects, as a whole the class struggled with references.

Table 6 Perceived usefulness of Wikipedia assignment in improving writing skills

	Very useful	Somewhat useful	Neutral	Not very useful	Not at all useful
Writing introductions	5	4	1	2	0
Using proper academic style	8	2	1	1	0
Expressing ideas clearly	6	4	1	1	0
Structuring my writing	7	3	0	2	0
Linking sentences smoothly	5	3	2	2	0
Finding reliable sources	10	1	0	1	0
Analysing sources	8	2	1	1	0
Summarising information	6	4	1	1	0
Referring to sources in text	8	2	0	2	0
Revising and proofreading my work	4	5	0	2	0
Formatting references/sources	6	3	2	1	0
Using correct grammar	6	3	2	1	0
Planning my time for long assignments	3	4	3	2	0
Avoiding plagiarism	6	4	1	1	0

The next section asked participants about the extent to which they enjoyed various aspects of the writing project, the results of which can be seen in *Table 7*. A majority of students at least "somewhat enjoyed" picking the topic, finding and analysing sources, writing the text of the article, and formatting and publishing the articles using Wikipedia's online system. Students were less enthusiastic about editing their own drafts and those of their peers, and did not seem particularly keen on having their drafts edited by other students. This was somewhat disappointing to the course instructor, as one of the greatest unique benefits of the Wikipedia project is its collaborative nature which resembles the system of peer review found in true academic writing.

	Very much enjoyed	Somewhat enjoyed	Neutral	Somewhat disliked	Very much disliked
Picking a topic	4	7	1	0	0
Finding and analysing sources	1	9	2	0	0
Writing the text of the article	3	4	5	0	0
Editing my own drafts	3	0	9	0	0
Editing other students' drafts	2	3	5	2	0
Having my draft edited by other students	2	4	5	0	1
Formatting and publishing the article using Wikipedia's system	7	2	3	0	0

Table 7 Reported enjoyment derived from aspects of the project

Finally, eight of the twelve respondents answered the short answer question, "Would you recommend that the instructor continue using this assignment to teach academic writing to other groups of students? Why or why not?" in the affirmative, with respondents calling it a "great, creative and modern assignment," "a good summarizing of many tasks in one overall exercise," a "fun and very new experience," and saying that it "helps us improve our general understanding in the language and also on other topics," that "it gives a sense of accomplishment knowing we're doing something many others are gong (sic) to see," and that "I improved a-lot of sides in my writing style I didn't know about." It is difficult to read too much into this feedback considering that the four who abstained from answering might have had negative experiences and that less than half of the class completed the questionnaire, but it does point to a generally positive experience for students overall.

Conclusions

Although the results of the case study are far from conclusive due to its small scale and short time frame, the students' experiences throughout the assignment's

implementation seem to suggest that a Wikipedia writing assignment is viable for teaching academic writing to a group of international English for academic purposes university-level course. Students enjoyed having an "authentic" writing experience, and those whose articles were successfully published felt a unique sense of accomplishment. Students skills and confidence in English academic writing seem to have increased throughout the duration of the project as intended.

However, significant drawbacks and obstacles when using Wikipedia as the basis of a writing project must be considered. Classrooms must be equipped with enough computers and a reliable internet connection to be able to carry out the activities listed in this article, and students ideally need access to computers and internet outside of the classroom as well. The project is time consuming, and needs curriculum to be designed around its implementation. Most importantly, the instructor must be competent enough in Wikipedia's technologies and systems to be able to teach and assist students. For many instructors who are already short on time, it may not be worth the investment.

Nevertheless, the revolution of ICT in the classroom is here to stay, and instructors must find ways to meaningfully integrate it in order to prepare students for the 21st century. Despite its drawbacks, a Wikipedia-based assignment can be recommended to adventurous and open-minded instructors who wish to provide their students with a unique, engaging, and memorable writing experience.

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