Wikipedia in higher education: Changes in perceived value through content contribution

Wikipedia en la Universidad: cambios en la percepción de valor con la creación de contenidos

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Abstract

Wikipedia is a widely used resource by university students, but it is not necessarily regarded as being reliable and trustworthy by them, nor is it seen as a context in which to make content contributions. This paper presents a teaching and research project that consisted in having students edit or create Wikipedia articles and testing whether or not this experience changed their perceived value of the platform. We conducted our experience at Universitat Pompeu Fabra (Barcelona, Spain) and University of Niš (Niš, Serbia) with a total number of 240 students. These students edited articles and answered two questionnaires, one before and one after the exercise. We compared the pre and post experience answers to the questionnaires with a series of paired samples t-tests, through which our data showed that students did significantly change their perception of reliability and usefulness, and of likeliness of finding false information on Wikipedia. Their appreciation of the task of writing Wikipedia articles, in terms of it being interesting and challenge also increased. They did not significantly change, however, their judgement on the social value of the platform, neither in the university nor in the general context. In addition, the open questions and informal feedback allowed us to gather valuable insights towards the evaluation of the overall experience.

Resumen

Wikipedia es un recurso muy utilizado por estudiantes universitarios, pero no está necesariamente bien valorado en términos de fiabilidad, ni tampoco es visto como un entorno en el que hacer aportaciones de contenido. Este artículo presenta un proyecto de docencia e investigación que consiste en proponer que los estudiantes editen o creen artículos para la Wikipedia, y en comprobar si la experiencia modifica su valoración de la misma. Se realizó la experiencia en la Universidad Pompeu Fabra (España) y la Universidad de Niš (Serbia) con un total de 240 alumnos. Editaron artículos y respondieron dos cuestionarios, uno antes y otro después de la experiencia. Se compararon las respuestas mediante una serie de pruebas T para muestras

emparejadas, a partir de las cuales pudimos comprobar que los datos mostraban un cambio significativo en su percepción sobre la fiabilidad y la utilidad de la Wikipedia y sobre la probabilidad de encontrar información falsa en ella. También cambió su apreciación de la tarea de editar artículos, que se valoró como interesante y representó un reto. En cambio, su valoración del prestigio social de la Wikipedia, tanto en el contexto universitario como el general, no varió significativamente. Adicionalmente, las preguntas abiertas y el feedback informal permitieron recoger informaciones muy valiosas respecto a la valoración del conjunto de la experiencia.

Keywords / Palabras clave

Collaborative learning, Internet, information, competence, university, students, literacy, digital culture.
Aprendizaje colaborativo, Internet, información, competencia, universidad, estudiantes, alfabetización, cultura digital.

1. Introduction

The use of Wikipedia in education has been implemented in a significant number of cases and has become a common practice in recent years, as it can be seen for instance on the Wikimedia Out-reach Education Program website (Wikimedia, 2016). Recently, Lerga and Aibar have published an extensive and detailed guide on how to use Wikipedia in higher education, which includes categories of possible activities such as critical analysis of existing articles, expanding and improving existing articles and creating new articles, among others (Lerga & Aibar, 2015).

These practices have been shown as having significantly improved some basic skills in students, such as interaction and communication, writing and comprehension, research and motivation, along with the social benefits of contributing to and participating in the open resource culture of the project (Lerga & Aibar, 2015; Ricaurte-Quijano & Álvarez, 2016) as part of the open knowledge (García-Peñalvo, García-de-Figuerola, & Merlo-Vega, 2010; Ramírez-Montoya & García-Peñalvo, 2015). Along with this, it is important to note that they also foster the development of media literacy skills and the collaboration among students (Dawe & Robinson, 2017; Di-Lauro & Johinke, 2017), and of students with Wikipedians. It has been noted that the participation in an established online community –with its tacit rules and cultural norms– represents a process of acculturation that can be very valuable to the students (Brailas & al., 2015).

However, there are still many concerns among the faculty in the universities regarding the use of Wikipedia, mostly due to a perceived lack of credibility, accuracy and reliability by a significant number of teachers (Llados & al., 2013; Aibar & al., 2014; Konieczny, 2014), although these have grown smaller over time (Shachaf, 2009; Soules, 2015). In recent years, there have been significant efforts to report on and advocate for the formal use of Wikipedia in academic practices (Konieczny, 2016, Freire & Li, 2016; Meseguer-Artola & al., 2016; Jemielniak & Aibar, 2016; Di-Lauro & Johinke, 2017), and even to push Wikipedia's importance in assessing academic research impact (Kousha & Thelwall, 2016).

On the part of the students, it is certainly a widely used resource, but it is not necessarily valued regarding credibility or usefulness either (Meseguer-Artola, 2014; Selwyn & Gorard, 2016; Huang & al., 2016). Arguably, this is often due to a lack of knowledge of how the processes of editing and discussing articles take place (Menchen-Trevino & Hargittai, 2011).

Among the motivations to introduce Wikipedia in the classroom, previous research has identified mainly two types of reasons. First, strictly from the pedagogical point of view, it is seen as a very valid exercise to enhance students' literacy skills (Hafner, Chik, & Jones, 2015; Walker & Li, 2016; Di-Lauro & Johinke, 2017). Certainly, the process of writing for Wikipedia covers all the aspects of academic writing –originality, rigor, peer review, etc.– with the benefits of immediate dissemination, an aspect which connects to the second type of reasons identified. Jemielniak & Aibar (2016) have noted the immense readership of the platform, and the fact that contributing to it helps to popularize the respective fields of research within which the activities are inscribed, while it represents

contributing to the benefit of the wider society. Wikipedia is not only part of but the paradigm of the open culture of Internet. And it is in the contribution to this that many authors inscribe their interest in these types of activities (Shane-Simpson, Che, & Brooks, 2016; Luyt, 2016), hoping to engage the students in the same type of motivation that Wikipedians have (Nov 2007). In our case, along with these two reasons, it was important for us to invite our students to contribute to a platform that they all use extensively, but not necessarily value as a relevant cultural artefact.

Additionally, we deemed important to enquire about the editing of text in a multilingual context. In both cases, our students were able to read articles in at least in three languages (Catalan, Spanish, and English for Universitat Pompeu Frabra students; Serbian, Croatian, Bosnian and English for University of Niš students). Contrasting and comparing the different versions became part of the exercise, as it is an interesting aspect to be able to acknowledge the difference in coverage and the possible biases in the different language editions, which have been identified in the literature as being more likely to occur in smaller language communities, as it is expected that they would have a smaller community involved in the culture adaptation process (Massa & Scrinzi, 2012; Eom & al., 2015).

The work presented here draws upon the authors' previous research on different areas related to the pedagogic uses of information technologies and open platforms. Some of these efforts have addressed the process of acquisition and evaluation of generic and transversal skills, such as socialization process, critical capacity (Freixa & Sora, 2008) or of academic writing standards (Freixa & al., 2013), along with more generic accounts of the competencies for the practice of interactive communication (Soler-Adillon & al., 2016), and some specific studies on the use of interactive and communications technologies in education (Pavlovic, Stanisavljevic-Petrovic, & Soler-Adillon, 2016; Stanisavljevic-Petrovic, Pavlovic, & Soler-Adillon, 2016).

The study presented in this paper was designed during the 2015-2016 academic year in collaboration with Amical Wikimedia and implemented during the Summer term on both Universitat Pompeu Fabra (Spain) and University of Niš (Serbia). Section two explains the design of the study and the context in which it took place, including the creation of the questionnaires that served as the basis for it. Section 3 presents the results of the questionnaires, which students responded before and after taking part in the creation and editing of Wikipedia articles, that were aimed at exploring the changes in perception of it after the task, both through Likert scales and open questions. Finally, section 4 discusses these results with respect to the initial hypothesis and the existing literature presented in this introduction.

2. Material and methods

Our investigation took place in two different higher education institutions: Universitat Pompeu Fabra (UPF) in Barcelona, Spain, and University of Niš (UN) in Niš, Serbia, during April to June of 2016. Students were asked to fill in two questionnaires: one before editing a Wikipedia article as a course exercise, and one after the experience. The project was partially funded by UPF's Center for Learning Innovation and Knowledge and also had the support of Amical Wikimedia, the independent association of volunteers for the promotion of Catalan culture through the Catalan version of Wikipedia.

At UPF, the experience took place in the Digital Culture class, a first-year mandatory course in the Audiovisual Communication undergraduate degree. The topics of the course range from digital photography and animation to interactive art and interaction design. At UN, the experience took place in the Computer Science class, a first-year mandatory course on Communication and Public Relations, as well as on Journalism undergraduate degrees. The topics of the course cover the history of computers, hardware, software, multimedia and the Internet.

The two questionnaires (Q1 and Q2 for pre and post experience respectively) were designed to address our research question about the perception of Wikipedia before and after the experience of editing or creating an article, in the form of both Likert scale and open questions. In addition, we added a series of general questions regarding the use of Wikipedia and, since we were performing

our study in two contexts in which we could expect students to be able to access at least three different language editions of this online encyclopaedia, we also added some questions about language use and choice for editing. However, the focus of the study was, as said, on the perception of Wikipedia, and thus we will be discussing here this part of the research.

The main research question we were addressing with this design was: "Will the participation of the students in the process of editing and creating Wikipedia articles influence their perception of the platform from reliability, trustworthiness and value within the academic and general context?".

2.1. Design of the activity

This study on the perception of Wikipedia is part of a larger pedagogical effort, within which the researchers implemented the creation of content for this open platform. The aim of the activity was for our students to become familiar with the process of writing for Wikipedia and, through this, to understand the process of collaborative writing, peer review, good academic practices and to contribute to an open access platform. By writing Wikipedia articles instead of strict academic essays, we were hoping that they would engage in a new, challenging experience, while contributing to their work to a project that they use extensively.

A secondary goal was to enhance the coverage of Wikipedia on the areas of our courses. Thus, while giving the students a large degree of freedom to find topics they were interested in, their work would immediately become valuable for future students on their degrees. This academic experience was designed with the invaluable guidance of volunteers at Amical Wikimedia, who has extensive experience in designing workshops and activities were participants edit and create articles.

It was important that the experience for the students was properly guided, and that they responded the questionnaires at relevant times. Thus, Q1 was given to the students before their first contact with the edition process of the Wikipedia, and Q2 once they had already finished their article. In between, they were given a general introduction to the process of editing and creating articles, and were guided throughout the process with the help of the Wikipedia volunteers both directly and through platform's peer review process.

Following this procedure, we were able to make sure that the questions in Q2 were answered only after the whole process of editing had been completed, including research, editing, and dealing with the platform conventions and curating process – through both robots and volunteers.

2.2. Questionnaires

Q1 had four main sections. It was designed to gather a general idea of the student's uses and knowledge of Wikipedia, and it contained a set of questions that would be repeated in Q2 to test the changes before and after the experience of editing Wikipedia articles. As said above, this was the central part of the study and consequently that on which this paper is focused.

The first and largest section in Q1 enquired about the general use of Wikipedia, asking about situations and patterns of use. It used Likert scales, either temporarily based (always / usually / occasionally / rarely / never) or a more common one based on agreement to a statement (strongly agree / agree/ cannot decide / disagree / strongly disagree). It contained 16 Likert-based questions and one open question.

Section 2 and 3 enquired about Wikipedia editing (expected interest and challenge) and value of Wikipedia respectively. These sections contained the following questions, which were those repeated in Q2:

- Editing Wikipedia articles is an interesting task.
- Editing Wikipedia articles is a challenging task.
- Wikipedia is a reliable source [for use] in the University context.
- Wikipedia is a useful source of information.
- It is possible to find false information on Wikipedia.

- Do you think that the consideration of Wikipedia is correct in the context of University studies?
- Do you think that the consideration of Wikipedia is correct in general?

Whilst the first five were answered with an Agree / Disagree Likert scale, we created an ad-hoc Likert scale for the last two questions, so that students could choose between the following: It is strongly undervalued / It is a little undervalued / Its consideration is correct / It is a little overrated / It is strongly overrated.

Q2 was shorter, and it repeated the questions mentioned above with an open question at the end of the section. Before ending with a final section on language, it briefly enquired the students about the process of writing the articles and whether or not they though that they would keep editing it.

3. Results

The overall participation was of 240 students. Each of them was required to either edit significantly or create from scratch an article for the Wikipedia related to their field of study as part of their course assignments. They were also required to answer two questionnaires, one before and one after the experience.

67.5% of the participants were UN students (N=162), and 32.5% were UPF students (N=78). 67.9% were female participants (N=163), 30.8% males (N=74), and 1.2% (N=3) preferred not to answer. A 75.4% of the students were first years (N=181), 10.8% were third-year students (N=26), and 13.7% were in their fourth year (N=33).

3.1. Quantitative data: statistical and descriptive analysis

A series of paired-samples t-test was conducted to compare the answers in Q1 and Q2 on these questions that were identical in both questionnaires. What follows is a list of these questions and the results of each test, along with some descriptive analysis of the percentages of the answers (see table 1 for details). The means are calculated from 0 being 'Strongly Disagree' to 4 being 'Strongly agree' on the first, and from 0 being 'It is strongly overrated' to 4 'It is strongly undervalued' on the latter two (see previous sections for details on the scale answers). The significance threshold was set at .05 for all cases.

Table 1. Responses (in percentages) to the repeated questions in Q1 and Q2		Q1	Q2	change
Editing Wikipedia articles is an interesting task	Strongly agree	3.8	8.6	4.8
	Agree	43.3	70.3	27
	Cannot decide	45.4	14.9	-30.5
	Disagree	6.3	5.6	-0.7
	Strongly disagree	1.2	0.6	-0.6
Editing Wikipedia articles is a challenging task	Strongly agree	15.4	26.3	10.9
	Agree	51.2	58.3	7.1
	Cannot decide	28.7	10.9	-17.8
	Disagree	4.2	4.6	0.4
	Strongly disagree	0.4	0	-0.4
Wikipedia is a reliable source [for use] in the University context	Strongly agree	4.2	8.6	4.4
	Agree	29.2	56	26.8
	Cannot decide	28.8	20	-8.8
	Disagree	32.5	13.1	-19.4
	Strongly disagree	5.4	2.3	-3.1
Wikipedia is a useful source of information	Strongly agree	20	24	4

	Agree	65	68.6	3.6
	Cannot decide	11.3	5.7	-5.6
	Disagree	3.3	1.7	-1.6
	Strongly disagree	0.4	0	-0.4
It is possible to find false information on Wikipedia	Strongly agree	21.7	14.3	-7.4
	Agree	58.8	53.1	-5.7
	Cannot decide	13.7	18.3	4.6
	Disagree	5	9.7	4.7
	Strongly disagree	0.8	4.6	3.8
Do you think that the consideration of Wikipedia is correct in the context of University studies?	It is strongly undervalued	5	8	3
	It is a little undervalued	41.7	42.5	0.8
	It's consideration is correct	37.9	34.9	-3
	It is a little overrated	14.2	14.3	0.1
	It is strongly overrated	1.2	0	-1.2
Do you think that the consideration of Wikipedia is correct in general?	It is strongly undervalued	3.8	7.4	3.6
	It is a little undervalued	38.8	42.3	3.5
	It's consideration is correct	44.2	41.7	-2.5
	It is a little overrated	12.5	8	-4.5
	It is strongly overrated	0.8	0.6	-0.2

a) Editing Wikipedia articles is an interesting task. There was a significant difference in the scores for Q1 (M=2.4, SD=0.71) and Q2 (M=2.8, SD=0.69) conditions; t(4)=-5.176, p < .001.Not surprisingly, in Q1 there were a significant number of students who remained neutral in their answer (45.4%). Many others (43.3%) selected 'Agree' on this statement, leaving the rest of the options in very low numbers. In Q2, a very important number of answers agreed with the statement (70.3%), which added to an almost 5% increase on the 'Strongly agree' showed a combined agreement 78.9%, leaving an even smaller percentage on the negative spectrum (5.6% 'Disagree' and 0.6% 'Strongly disagree'), while still a 14.9% of the answers remained on the neutrality of 'Can not decide'.

b) Editing Wikipedia articles is a challenging task. There was a significant difference in the scores for Q1 (M=2.7, SD=0.78) and Q2 (M=3.1, SD=0.74) conditions; t(4)=-4.53, p<.001. This question presented almost identical shifts on the answers' percentages regarding the previous one, although with much lower numbers. The two positive answers went up from a combined 66.6% to an 84.6% (with about a quarter of the students agreeing strongly), while the negative remained in the 4.6%, but going to a null percentage in the 'Strongly disagree.'

c) Wikipedia is a reliable source [for use] in the University context. There was a significant difference in the scores for Q1 (M=1.9, SD=0.99) and Q2 (M=2.6, SD=0.91) conditions; t(4)=-6.591, p < .001. This question presents the most remarkable changes from Q1 to Q2. While the 'Cannot decide' remains still a big number on Q2 (20%, down from 28.8%), there is a 31.2% increase in the positive spectrum, with the 'Agree,' growing from 29.2% to 56%, and a 22.5% decrease on the negative spectrum. Thus, while in the first two questions there is a clear trend from undecided to positive, here there is a much bigger shift from negative to positive answers.

d) Wikipedia is a useful source of information. There was a significant difference in the scores for Q1 (M=3.0, SD=0.70) and Q2 (M=3.1, SD=0.59) conditions; t(4)=-2.622, p=.010. The changes in this question are more mitigated than on the previous ones. All the positive answers' percentages increase, but only a combined 7.6% from already big numbers (85% in Q1). The negative answers

went from 3.7% to 1.7%, with 0% 'Strongly disagree.' Thus, the perception of usefulness, which was already strong, strengthened according to Q2.

e) It is possible to find false information on Wikipedia. There was a significant difference in the scores for Q1 (M=3.0, SD=0.77) and Q2 (M=2.6, SD=0.99) conditions; t(4)=3.953, p<.001. Contrary to the others, in this case, the alternative hypothesis was that the change would be towards disagreement with the statement. And while the change was shown to be statistically relevant, the percentages shifted in relatively small numbers. The agreement with the statement was initially very high, with 21.7% 'Strongly agree' and 58.8% 'Agree.' In Q2 these numbers dropped in a 7.4% and 5.7% respectively. Interestingly, this is the only question where the 'Cannot decide' increased after editing Wikipedia articles (from 13.7% in Q1 to 18.3% in Q2). The combined disagreement went up from 5.8% to 14.3%.

f) Do you think that the consideration of Wikipedia is correct in the context of University studies? There was NOT a significant difference in the scores for Q1 (M=2.3, SD=0.84) and Q2 (M=2.4, SD=0.83) conditions; t(4)=-1.061, p=.290. As it can be expected by the non-rejection of the null hypothesis of the paired samples t-test, the numbers in this question changed relatively little, although they did so in the anticipated direction. Most of the students' answers indicated that they considered that Wikipedia was correctly regarded within the University context regarding reliability (37.9%), while even more considered that it was slightly undervalued (41.7%), with 5% saying that it was strongly undervalued. These numbers changed to 8% on the latter and increased only by 0.8% on the former, while the middle option lost a 3%. The answer stating that is a little overrated virtually remained the same, while strongly overrated option lost all of its already small 1.2% support.

g) Do you think that the consideration of Wikipedia is correct in general? There was NOT a significant difference in the scores for Q1 (M=2.3, SD=0.79) and Q2 (M=2.5, SD=0.77) conditions; t(4)=-1.896, p=.060. Like with the former question, the changes here weren't big enough to be accounted for as statistically relevant, although as one might anticipate by the p value, they were somewhat bigger. Again, the students considering that it was undervalued –this time in the general context– augmented, from a combined 42.6% to a 49.7%, while 44.2% in Q1 and 41.7% in Q2 answered that Wikipedia's reputation was correct. The students stating that it was overrated went down from a combined 13.3% to 8.6%.

Summarizing, only on the first five questions show a statistically significant change from Q1 to Q2, while the answers to the two questions on the consideration of Wikipedia were not different enough to reject the null hypothesis, and thus we cannot conclude that the students´ opinion in respect to this changed with the article editing exercise. On the contrary, our research hypothesis was confirmed for the rest of the questions: there was a significant increase in students' perception of usefulness, reliability, and confidence in not finding false information in Wikipedia. Likewise, students found both more interesting and more challenging to edit Wikipedia articles in Q2 than in Q1.

3.2. Open questions and student feedback

The second focus of interest was on the feedback we received from students both informally and in the form of open questions and course feedback. The main open question in Q2 addressed specifically and quite directly the focus of the study, by asking the participants "How did editing a WP article change your perception of it?".

The answers to this question were overwhelmingly positive in the sense that they praised the robustness of the project regarding the quality of the information it hosts, and thus stating that after the experience they thought of it as a much more reliable platform. Examples of these answers are:

- "Now I think that we can't find false information on Wikipedia".

- "Now I know that it is not possible to make anything up. Every word is checked, and so is each article several times".
- "I started to value the information found on Wikipedia more than I used to before I edited it".
- "The need to reference everything made me realize it's more reliable than I thought it was".
- "I've seen it's more reliable than they say".
- "It changed my perception because of the volunteers that look after every article, which makes Wikipedia more reliable".
- "Now I am sure that the information found in Wikipedia is reliable because there are a lot of volunteers that correct what you write, being very strict in referencing information".
- "I realised how rigorous the supervision is".
- "It has changed a lot. I think I was underestimating Wikipedia".

A much smaller number of comments went in the exact opposite direction, either with quite broad strokes on how everyone can intervene, or addressing the authors' biases:
- "I realized that anyone could edit a Wikipedia article and I learned how easy it is to add new information that can be referenced but not necessarily true".
- "I realized that everybody could write whatever they want to".
- "Seeing how easy it is that anyone can edit it make me loose a bit of the trust I had in the page".
- "Now I'm aware that behind an article there is the person who wrote it, with his/her own opinion, which influences the information".

Finally, many students used their answer to this question to address the process of writing, and how it changed not their perception of how reliable or solid the project is, but how difficult (or in a few cases easy) it is to write an article and publish it there, without making judgements on trustworthiness in general:
- "I thought that it was an easy job, but I guess I was wrong about it".
- "After my text was corrected, I realized changing Wikipedia articles wasn't easy. Only people who are well informed about certain topics can change the articles".
- "I now think that editing a Wikipedia articles is more difficult than I have thought before. It is like writing small scientific article for University. You have to take care of references and lots of other small things and check lots of facts and respect lots of rules of writing that are similar to writing scientific work for the University. To sum up, it is a very challenging task that needs your full concentration and attention".
- "It is harder than I thought".
- "It is a heavy work so big applause for the people who work on it".
- "It made me realize how easy is to contribute".
- "It is easy to edit and very useful for other people".

Informally, both by following the students' progress and by talking to them, we could gather some interesting insights on how they were changing their perceptions. At the University of Niš, some students entered false information to see what happened and were very (and positively) surprised to find out that the information was changed in a matter of hours. In general, students were surprised by the efficiency of the volunteers monitoring the process. Mostly, this experience with the peer review process was positive, although in some cases the students were frustrated because they had to remove content and they considered that some particular volunteers were overzealous.

Another aspect that they enjoyed was the fact that their work would be made public immediately, and they had a strong sense of contributing to their field of interest, thus becoming very much aware of the collaborative effort behind Wikipedia and the importance of the open culture behind it. For some of them, it was particularly interesting to interact with the person they were writing about. When it was relevant, we encouraged students to get in touch with them, or with someone who had studied them. Beyond the general help in finding references and the positive answers that the students received, there were some especially interesting situations, such as a person attending the presentation of the Wikipedia article on himself, and a group of students getting in touch with the daughter

of Edgar Rubin, who sent them an unpublished photo of him – which is still in the process of becoming public access and thus publishable to Wikipedia.

In any case, as seen by the answers to the open questions and from what we gathered through informal feedback, there was a general consensus that Wikipedia was, in fact, a very strict environment where it was not easy to publish, and that this process ensured a high degree of reliability of the information published in it and, consequently, improved the perceived value of the platform.

4. Discussion and conclusions

Based on the survey results, it is possible to state that editing and creating Wikipedia articles had in general terms a significant influence on the perception of Wikipedia by the students, in terms of reliability, trustworthiness, and robustness of the process of posting information on the platform, and also proved that they found that the process was both interesting and challenging. However, we cannot conclude from our data that their perception of the appreciation of Wikipedia changed, both in general and in the context of University.

Students had already anticipated that editing Wikipedia articles would be both interesting and challenging, and these perceptions were stronger after the experience, with significantly bigger numbers moving from the undecided to the positive answers. In addition, as shown above, many of the comments to the open question referred to this aspect, stating that it had been difficult to get their information published on the site.

This appreciation of the robustness of the project of peer review within Wikipedia was linked, as the open question shows, to their perception of the reliability of the project. This is confirmed by the answers to the third question and to that referred to the possibility of finding false information on Wikipedia. They also gained some confidence in the usefulness of the project, although their appreciation of it from that point of view was already very strong from the start.

Thus, the hypothesis underlying our research question, which stated that students would regard Wikipedia as a more reliable project after participating in the creation of content, was confirmed.

The overall experience was a very positive one. Integrating Wikipedia in the classroom was successful from both the point of view of the students' perception of the online encyclopaedia and as a pedagogic exercise. There are some challenges that should be taken into account before using this type of exercise as a formal assessment: mainly, the unpredictability of the peer review process through the intervention of the volunteers, which can vary greatly from article to article. However, as noted by Di-Lauro & Johinke (2017), while certainly lacking the rigour of the academic publication peer review, it is a very thorough and well-documented process, and the involvement in the community is beneficial for the students. In any case, in general terms, and as the survey and informal feedback accounted for, the advantages of it superseded the difficulties. Additionally, we were successful in improving the coverage of Wikipedia to our teaching domain, thus involving our higher academic institutions in the process of content curation of a resource that has become more and more important in our context. Along the lines of the suggestions of Jemielniak and Aibar (2016), this is, in turn, a contribution to disseminating the work that is being done at the higher education institutions, thus transferring this knowledge to the wider society. Finally, strictly regarding the study of the perception of Wikipedia, we aim at improving our method by adding several more questions to address specific issues on trust, the perception of reliability and use, and to do so in a much larger number of students internationally.

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