

Wikipedia - From the Popular Source of Information to the Pedagogical Tool

Dragana Pavlovic¹ & Zorica Stanisavljevic Petrovic² & Anastasija Mamutovic³

¹ Department of Communication and Journalism, Faculty of Philosophy, University of Nis, Cirila i Metodija, 2, 18000 Nis, Serbia

^{2,3} Department of Pedagogy, Faculty of Philosophy, University of Nis, Cirila i Metodija, 2, 18000 Nis, Serbia

Correspondence: Dragana Pavlovic, Faculty of Philosophy, University of Nis, Serbia.

Email: dragana.pavlovic@filfak.ni.ac.rs

Received: October 23, 2017 Accepted: November 28, 2017 Online Published: December 1, 2017

doi: 10.23918/ijsses.v4i3p36

Abstract: This paper presents a research with a goal to interview students about their attitude towards using contents from the Internet encyclopedia – Wikipedia. The research tasks are related to determining students' attitudes about the quality and reliability of the content on Wikipedia, depending on their gender and academic success, meaning average grades during studies. The research results, based on 186 respondents - students from the Faculty of Philosophy and the Faculty of Fine Arts, show that students use information from Wikipedia for academic purposes, but they have doubts considering its reliability and credibility. The research confirms there are many statistically significant differences between students' attitudes related to the independent variables of the research – gender and average grades. The conclusion of the research is that with better academic achievements, the degree of Wikipedia use for academic purposes decreases, and the degree of the critical approach to contents on the Internet encyclopedia increases.

Keywords: Wikipedia, Students, Attitudes, Source of Knowledge

1. Introduction

Wikipedia is one of the Web 2.0 tools which are currently being used to support teaching practice (Dagiene & Kurilovas, 2010); a website whose users can add, change, delete or report the offered content. The term «wiki» has been taken from Hawaiian phrase *wiki-wiki*, which means fast-fast. Wikipedia is defined as medium for sharing and promoting different contents and the construction of knowledge (O'Neill, 2005; Lund, 2008).

Wikipedia promotes the belief in "the wisdom of the crowd", the concept that the collective knowledge of the group of individuals is greater than the knowledge of experts of certain fields (Surowiecki, 2004).

What specifies Wikipedia is the fact that it is owned by its community. Taking that into consideration, Wikipedia allows its users to generate, edit and connect their specific knowledge into one mutual, available and open digital space (Wheeler, 2008).

Although Wikipedia is a very popular source of information, there are many debates and discussions about its use in the educational domain. Many teachers – professors, do not allow using Wikipedia contents, warning students to use other sources of knowledge in their papers (Meishar-Tal, 2015). On the other hand, many teachers see Wikipedia as a starting point for getting information and suggest students to check the validity of information using other sources (Menchen-Trevino & Hargittai, 2011). While some of them try to teach students how to use Wikipedia in the appropriate way, others strongly claim that students should not be allowed to quote the content from this site in their academic works and papers (Meishar-Tal, 2015). The problematic aspects of using information from Wikipedia in the academic sphere are related to the credibility of its content, organizational models and the possibility of abuse by students. Variability of the Internet encyclopedia data can lead students to base their works on misinformation. Open connection means that anyone, regardless his qualifications or proficiency, can edit articles on Wikipedia. The result of such practice is a great number of false information. There is a possibility that students use Wikipedia contents as an authoritative source, therefore base their research on false information (Purdy, 2010; Dennig et al., 2005). Another example of inadequate use of Wikipedia by students is literally copying parts of articles into their papers, citing them as their own ideas and attitudes (Konieczny, 2012). Instability and variability of Wikipedia articles is in total contrast to traditional literature which is used in educational institutions and characterized by reliability and credibility of information (Eijkman, 2010). In spite of its popularity, many users do not know much about how the site functions. Many students are not even familiar with possibilities of contribution to the quality of articles on Wikipedia (Menchen-Trevino & Hargittai, 2011).

2. Advantages of Using Wikipedia as a Pedagogical Tool

The Internet encyclopedia Wikipedia is considered to be an important paradigm for creating, changing and editing the online content. It is very successful and popular and it is said to be one of 10 most visited websites (Kittur, Shu, Chi, 2008). Just the English version has over 2 million of articles. If it is used in an appropriate way, Wikipedia can be a powerful and useful pedagogical tool for every educational level. The teachers could take the crucial role in that process by taking an active part in contributing to the quality of Wikipedia articles. Authors (Schwartz et al., 2004) pointed at some of the advantages of using Wikipedia during an educational process which are related to open and free sources of information: it is easy to learn writing on Wikipedia, limited approach, simple content which is easy to understand and easy access to the online encyclopedia using any browser. The educational level is the most important predictor of using Wikipedia. Pew research center (www.pewresearch.org) conducted a research that showed that Wikipedia is the most popular among the Internet users with university degree - even 69% of them use this website (Zickuhr & Rainie, 2011).

Since Wikipedia is a public website, each article or a piece of information that students post is visible and can be rated not only by professors, but also by the whole community. Publishing their papers this way motivates students to put a lot of effort and hard work so that their contribution to the online encyclopedia would be positively valued (Ducate, Anderson & Moreno, 2011; Feng & Beaumont, 2010; Yan et al., 2010). The online internet encyclopedia has an important role in the process of developing computer-mediated socialization among students through presenting support, conflicts, disagreements and other challenges (Miller, 2014; Carroll et al., 2013). The educational value of Wikipedia is recognized by some professors. It is perceived as a unique opportunity for educating students in the era of digital literacy (Okoli et al., 2014). When teachers encourage students to master information so that they can question it independently, their ultimate goal is to create a new generation of people who think critically (Leitch & Leitch, 2014). Democratization of creating the knowledge and pedagogical values are also outlined as one of its positive characteristics (Konieczny, 2014; Hazari, North & Moreland, 2009).

Wikipedia offers students an excellent platform for facing the challenges of the academic writing: citation, research, general (group) agreement and the writing style. Introducing students to Wikipedia and its creating procedures is of a great importance for raising their sense of credibility and reliability of the information they can read as Wikipedia users. This kind of online (Internet) activity improves students' research and critical skills (McNely et al., 2010). Wikipedia has also often been named as «an effective tool for educators». Because of its characteristics (fast and easy access to information and short and simply written texts) it can be applied to any educational level (Crovitz & Smoot, 2009). Wikipedia can be used in education to encourage cooperation between students enabling them to read and edit works of their peers (Lane, 2014; Wang et al., 2013; Ben-Zvi, 2007), and research shows that here is a need for a pedagogical approach that provides students with a genuine collaborative learning model in order to maximize positive effects of using Wikipedia (Zheng, Niiya & Warschauer, 2015; Hadjerrouit, 2012).

3. Review of Previous Research on Wikipedia as a Source of Knowledge

Researches show that Wikipedia has a privileged role in students' academic practice, therefore it is a dominant and favored source of information compared to other online sources. Despite the fact that 90% of students said they used Wikipedia, they accept some of its limitations (respondents claim they would rather use library resources, official literature, electronic books and scientific websites) A very small number of students is ready to use Wikipedia as a primary source and for specific tasks, while much greater number of students points at its introductory, additional and orientational role. The Internet encyclopedia offers students a temporary solution for a topic they would research in details later on using other resources (Selwyn & Gorard, 2016).

The research results confirm that using Wikipedia is connected to the academic achievements of students. The better achievements they have, the less they use the Internet encyclopedia. In this research, the students who were examined showed a rather low level of criticism in their attitudes toward

Wikipedia (e.g. related to the quality and reliability of its sources, checking information at other sources) and almost half of them rated Wikipedia as a useful resource for their academic requirements. Attitudes on using Wikipedia are mostly influenced by gender. As in previous researches, male respondents in the present paper show lower level of criticism of Wikipedia and higher level of its use. It is also confirmed that students' use of Wikipedia is also connected to the scientific discipline, study level and professors' attitudes. Wikipedia is more often used by the students from technical and science universities, post-graduate students and those students whose professors allow the use of that source (Faletar-Tanacković, Djurđević & Badurina, 2015).

Researches show that gender, university and the study year significantly affect the use of Wikipedia. Namely, the use increases with the year of study: 83% of the first-year students, 87,2% of the second-year students, 88,7% of the third-year students and 94,2% of the fourth-year students who use this website. There are also many differences in the perception of the use of Wikipedia, male students (76,7%) consider it more useful than female students (58,7%). Considering universities, 78,2% students of technical and mechanical sciences and mathematics consider Wikipedia useful, unlike students from teaching (educational) universities who consider it less useful (34,4%). The research shows that variables that affect the perception of using Wikipedia as a source of knowledge are gender (male students are 2,6 times more likely to consider the content on Wikipedia useful) and age (with every year increases the perception of how useful Wikipedia is for 1,02). The research also examined the use of Wikipedia as a bibliographic source. The largest number of respondents answered that they use Wikipedia for further reading (548) or finding new sources (496). Students made a clear distinction between using the Internet encyclopedia for direct quoting of its content and using it as a starting resource. Students consider Wikipedia as an ideal tool when they need to find some information fast and they do not have time to visit a library - 1150 (Selwyn & Gorard, 2016).

The largest number of students (83%) use Wikipedia in order to get some basic information about a certain topic. Students also pointed at following reasons for using Wikipedia: help with starting a research (76%), easy and simple use (69%), help with understanding certain terminology (67%). At a certain degree, students use Wikipedia because its content is easy to understand (64%), because its content includes quotations (54%), because they consider it more reliable than other websites (17%) or because it enables the authorship (16%). Most respondents (70%) use Wikipedia at the beginning of a research process, while a very small number (2%) uses it during or at the end of a research (Head, Eisenberg, 2010). For example, students working on specific projects commonly described turning back to Wikipedia and similar resources, to help them understand the key aspects of the research (Biddix, Chung & Park, 2011).

At California State University, Northridge, a research has been done in order to show whether professors and students have ever been in the role of an author on Wikipedia, whether they have changed its content and why. Only 24% of students answered they had never edited its content while 47% of students answered they had done it several times. 4 of 23 students encouraged editing of false information while 14 of 23 thought that the read content should be edited (Foley & Chang, 2006).

4. Methodology of Research

Research goal: The main goal of this research is to determine attitudes of students from the Faculty of Philosophy and the Faculty of Fine Arts of Wikipedia as a source of knowledge in the academic environment. According to the goal, following *research tasks and hypotheses* are set:

- 1) Question students about their attitude about the quality and reliability of the content from Wikipedia
- 2) Determine statistically important differences between students' attitudes in a relation to independent variables of the research – gender and achievements, which is based on the average grade during studies.
- 3) The general hypothesis of this research (1) is that students critically approach the contents on Wikipedia, that they have doubts considering accuracy and validity of the given information. Special hypotheses are: (2) there are statistically important differences related to gender and achievements, that students with higher grades and female respondents have a more critical attitude about Wikipedia as a source of knowledge.

4.1 Methods, Techniques and Instruments of Research

This research is based on descriptive method and scaling technique. The basic instrument of this research is the assessment scale (WKIZ) which is specially designed to respond the requirements of this research. WKIZ scale has a great internal agreement and Cronbach's alpha value is 0,86. Assessment scale which examines students' attitudes about Wikipedia consists of two parts. The first part relates to basic information about students, like gender, average grade during studies and the university they study at. The second part of the WKIZ instrument is Likert's assessment scale which consists of a series of statements regarding students' attitudes about quality and reliability of the content on Wikipedia. After each statement, respondents on a five-degree scale choose the number which symbolizes their attitude about a certain statement, where number one means *I completely disagree*, while number 5 symbolizes the attitude *I completely agree*. Statistical data analysis of the empirical research was performed by means of the SPSS (ver. 20.0) computer software for statistical analysis. The descriptive statistics was used, non-parametric χ^2 test and t-test for determining statistically important differences between two arithmetic means. Given results are presented by text and tables.

The research sample is intentional and consists of 186 respondents, students from the Faculty of Philosophy and the Faculty of Fine Arts. The structure of the sample related to gender consists of 118 female students (63,4%) and 67 male students (36%). Regarding the academic achievements, the average grade during studies, the structure of the sample is operationalized into two categories: the first category consists of students with the average grade from 6,0 to 8,5 (96 of them, 51,6%) and the second category consists of respondents with the average grade from 8,6 to 10 (89 of them, 47,8%)

4.2 Data Analysis and Research Result

Table 1: Students' attitudes about the quality and reliability of the content on Wikipedia

Quality and reliability of the content on Wikipedia	I completely disagree		I disagree		Neither I agree nor disagree		I agree		I completely agree		M	SD
	N	%	N	%	N	%	N	%	N	%		
	Wikipedia is a reliable source of information because it is created by experts	17	9,1	75	40,3	59	31,7	35	18,8	0		
Information on Wikipedia can be false	2	1,1	9	4,8	13	7	86	46,2	76	40,9	4,20	0,85
Wikipedia is equally reliable as the official literature	34	18,3	88	47,3	48	25,8	15	8,1	1	0,5	2,25	0,86
I doubt the accuracy and validity of data on Wikipedia since they can be changed and edited by anyone	1	0,5	17	9,1	43	23,1	70	37,6	55	29,6	3,86	0,96
I accept the information on Wikipedia as reliable and accurate	17	9,1	42	22,6	84	45,2	43	23,1	0	0	2,82	0,89
When using Wikipedia, I notice false information	2	1,1	31	16,7	46	24,7	89	47,8	18	9,7	3,48	0,91
Wikipedia is of the same quality and equally reliable source of information as a printed encyclopedia or a magazine	38	20,4	65	34,9	57	30,6	25	13,4	1	0,5	2,38	0,97
I compare information from Wikipedia with other sources in order to check whether it is true	10	5,4	20	10,8	37	19,9	86	46,2	33	17,7	3,60	1,06
Professors approve when I use Wikipedia as a resource in my papers	40	21,5	62	33,3	38	20,4	38	20,4	8	4,3	2,52	1,16
I use the content I find on Wikipedia in my personal papers	17	9,1	17	9,1	53	28,5	81	43,5	18	9,7	3,35	1,07
I use the content I find on Wikipedia in my papers, but I paraphrase	12	6,5	28	15,1	44	23,7	89	47,8	13	7	3,33	1,02
I literally quote contents from Wikipedia in my papers	56	30,1	64	34,4	56	30,1	7	3,8	3	1,6	2,12	0,94
I cite Wikipedia in my reference list	63	33,9	46	24,7	37	19,9	29	15,6	11	5,9	2,34	1,25

Table 1 shows the attitudes of the respondents about the quality and reliability of the Wikipedia content. Respondents were offered 13 statements, and for each of them they had to choose the degree of their agreement on the scale from 1 to 5. Higher value shows higher degree of agreement with the statement, therefore a more positive attitude. The first statement examines if students think that Wikipedia is a reliable source of information because it is created by experts. The average response (M=2.60) shows that students do not agree with this statement because their responses were concentrated around number two, which on a five-degree scale WKIZ means *I disagree*. Almost half of the respondents (46,2%) agree with the statement that information on Wikipedia can be false, and in addition to that, the same number think that the official literature is a far more reliable source of information than Wikipedia (47,3%). The largest number of respondents (70) claim they doubt the accuracy and validity of data on Wikipedia.

In order to examine perceptions of the students regarding quality and reliability of the content on Wikipedia, the following statement was used: *I accept the information on Wikipedia as reliable and accurate*. According to data from Table 1 it can be seen that 45,2% of students have a neutral attitude, neither they agree nor they disagree with this statement. Based on that it can be concluded that students who are used as a sample in this research still do not have a clearly defined attitude about the content of the Internet encyclopedia. 47,8% of students say they notice false information when using Wikipedia. Students do not agree that Wikipedia is an equally reliable source of information as a printed encyclopedia or a magazine (M=2,38). Therefore, traditional sources of information still have the primacy over online resources as Wikipedia and they still have primacy regarding reliability and quality. Even 46,2% students say they compare information from Wikipedia to other sources of information in order to check its accuracy. With the statement *Professors approve when I use Wikipedia as a resource in my papers* 21,5% of respondents completely disagree, 33,3% disagree, 20,4% neither agree nor disagree and completely agree 4,3% of students. Based on their responses it can be concluded that students are not familiar with their professors' attitudes about using contents from Wikipedia in students' papers. Although they doubt information on Wikipedia, 43,5% say they use information from Wikipedia for their seminar papers, for example. However, the encouraging fact is that although they frequently use the online encyclopedia, there is less students who literally copy the content from Wikipedia to their works (3,8%) than those who just paraphrase its contents (47,8%). The given data show that students have a critical approach to the information they find on Wikipedia - 46,2% students say they compare information from Wikipedia to other sources of information in order to check its validity and that they are aware that information on Wikipedia can be false), they doubt its accuracy and validity (37,6%) which confirms the first hypothesis of the research.

Table 2 shows data that confirm there are statistically important differences among responses of the respondents regarding the independent variable – gender. It can be seen based on given statements that there is a statistically important difference between male and female students regarding quality and reliability of the content from Wikipedia ($p > 0,05$). Given data show that none of the categories agree with the statement that Wikipedia is a reliable source of information because it is created by experts. According to the average responses it can be noticed that male respondents agree more with this statement (M=2,77) than female respondents (M=2,77). Students disagree the statement that Wikipedia

is equally reliable as the official literature. However, according to the given data, female respondents show a higher degree of agreement with this statement (M=2,34) than male respondents (2,08). The average response also shows that male respondents use Wikipedia as a source of information for their papers more often (M=3,68) than female respondents (M=3,16), which is a paradox, since male students show greater criticism towards Wikipedia as a source of information. Based on given data it can be concluded that the second hypothesis of the research (*it is assumed that female respondents have a more critical attitude about Wikipedia as a source of knowledge*) is not confirmed since male respondents are more aware of potential limitations of Wikipedia as a source of knowledge considering unreliable and changeable data (M=4,38) than female respondents (M=4,13), therefore they have a more critical attitude about using Wikipedia for academic purposes.

Table 2: Differences between students' attitudes about quality and reliability regarding gender

	Gender	M	SD	p
Wikipedia is a reliable source of information because it is created by experts	Female	2.51	0.92	0,05
	Male	2.77	0.81	
Wikipedia is equally reliable as the official literature	Female	2,34	0.84	0,05
	Male	2,08	0.90	
I use in my papers the content I find on Wikipedia	Female	3.16	1.03	0,00
	Male	3.68	1.09	
Information on Wikipedia can be false	Female	4.13	0.88	0,04
	Male	4.38	0.67	

Data given in the Table 3 show statistically important differences between students' attitudes about the quality and reliability of the content on Wikipedia regarding the average grade, which confirms the third hypothesis of the research. Namely, according to the assumption that students with better average grades are more critical towards the Wikipedia as a source of knowledge, given data show that with higher average grades are more doubtful regarding the accuracy and validity of the information on Wikipedia (students with the average grade between 8,6 and 10 agree more with the statement that information on Wikipedia can be false (M=4,46) unlike students with lower average grades (M=4,01)). According to the statistic parameter arithmetic mean, it can be concluded that students with higher average grades more often compare the information from Wikipedia with other sources in order to check it validity (M=3,78) than students with lower average grades (M= 3,41), they have more doubt in the accuracy and validity of this information (M=3,96 and M=3,77); when using Wikipedia they notice false information more often (M=3,52 and M=3,44); they paraphrase the content from Wikipedia more often when using it for their papers (M=3,37 and M=3,30) and they consider the official literature as a reliable source of knowledge (M=2,15 and M=2,34). Given results show the following: Students with higher average grades rarely use Wikipedia for the academic purposes.

Table 3: Differences in students' attitudes about quality and reliability of the content on Wikipedia regarding the average grade

	Average grade	M	SD	t-test	df	p
Wikipedia is a reliable source of information because it is created by experts	6,00-8,50	2.61	0.93	.060	183	0,9
	8,60-10,0	2.60	0.84			
Information on Wikipedia can be false	6,00-8,50	4.01	0.92	3.85	183	0,00
	8,60-10,0	4.46	0.62			
Wikipedia is equally reliable as the official literature	6,00-8,50	2.34	0.79	1.46	183	0,14
	8,60-10,0	2.15	0.94			
I doubt the accuracy and validity of data on Wikipedia since they can be changed and edited by anyone	6,00-8,50	3.77	0.95	1.37	183	0,17
	8,60-10,0	3.96	0.97			
I accept the information on Wikipedia as reliable and accurate	6,00-8,50	2.89	0.86	1.17	183	0,24
	8,60-10,0	2.74	0.92			
When using Wikipedia, I notice false information	6,00-8,50	3.44	0.97	-.59	183	0,55
	8,60-10,0	3.52	0.86			
Wikipedia is of the same quality and equally reliable source of information as a printed encyclopedia or a magazine	6,00-8,50	2.27	0.94	1.71	183	0,08
	8,60-10,0	2.51	1.00			
I compare information from Wikipedia with other sources in order to check whether it is true	6,00-8,50	3.41	1.13	2.39	183	0,01
	8,60-10,0	3.78	0.95			
Professors approve when I use Wikipedia as a resource in my papers	6,00-8,50	2.44	1.20	.863	183	0,3
	8,60-10,0	2.59	1.11			
I use the content I find on Wikipedia in my personal papers	6,00-8,50	3.28	1.15	.988	183	0,3
	8,60-10,0	3.43	0.98			
I use the content I find on Wikipedia in my papers, but I paraphrase	6,00-8,50	3.30	1.06	-.45	183	0,6
	8,60-10,0	3.37	0.99			
I literally quote contents from Wikipedia in my papers	6,00-8,50	2.01	0.86	-1.7	183	0,08
	8,60-10,0	2.24	1.01			
I cite Wikipedia in my reference list	6,00-8,50	2.41	1.30	.731	183	0,46
	8,60-10,0	2.28	1.21			

5. Conclusion

This research shows that using Wikipedia for the academic purpose is still a source of estimate and concealment. The research confirmed findings of some of the previous researches in this domain (Selwyn & Gorard, 2016; Head & Eisenberg, 2010; Foley & Chang, 2006). The largest number of our respondents (70) say they doubt the accuracy and validity of data from Wikipedia, and given results match the results of the research done in Osijek (Faletar-Tanacković, Djurđević & Badurina, 2015). Namely, in this research students also claim that the validity of the content on Wikipedia is questionable since anyone can change or edit it (M-3,91).

The practice of comparing information to other sources is common to Serbian students (46,2%), students from Osijek - respondents in this research also had a great degree of agreement (M-3,74) with the statement *I compare information from Wikipedia with other sources in order to check whether it is true* (Faletar-Tanacković et al., 2015). In the research done in France that questioned 841 young people (256 schoolchildren, 265 high school students, 148 university bachelor students and 172 master students) more than one in five young people said they check the quality of the content from Wikipedia at other sources (Sahut, 2014).

Complementarity of research results is also reflected in the students' perception of professors' attitudes about the use of Wikipedia in an academic context. In our study, a third of students (33.3%) say that teachers do not approve the use of this source of knowledge, which is similar to students who have been used as a sample for the research in Osijek (Faletar-Tanacković, Djurđević, Badurina, 2015) who point out that more professors prohibit (M-15, 1%) the use of Wikipedia for academic purposes than they favor (M = 6.2%) or stimulate it (M = 0.4%). Similar results were also obtained in a research done in France (Sahut, 2014): students who were used as a sample for the research in France pointed out that rating of Wikipedia among professors was questionable, so they think that the information given in Wikipedia articles is less valid than the content of the official literature. According to 42.5% of participants of the research, teachers have a rather negative opinion of Wikipedia and, for 15.8%, very negative, for 36.2% good and 5.2% a very good opinion.

Attitudes of students in Serbia, Croatia, France and the USA considering citing Wikipedia in the reference list are also very similar. The average response of the respondents (M-2,34) shows that the respondents in this research do not agree with the statement *I cite Wikipedia in the reference list*. Similar to those results, a third of students (32,5%) who were used as a sample for the research done in Osijek (Faletar-Tanacković, Djurđević, Badurina, 2015) pointed out they had never cited Wikipedia in the reference list, while a quarter of them said they had cited Wikipedia only when they had literally quoting it or when it had been the only source of certain (15,8%). Most of the students from the university in Toulouse said they had avoided quoting Wikipedia in the academic works (Sahut, 2014). Students from a USA university also pointed out they did not cite Wikipedia in the reference list and that although professors did not agree with that, they consulted Wikipedia when they had a need (which is confirmed by the results of the research called *How today's college student use Wikipedia for course-related*

research (Head & Eisenberg, 2010). Despite the territorial distance, the attitudes of students (not citing Wikipedia in the reference lists and using it despite professors' disagreements) are the same in Serbia, Croatia, France and the USA.

With the realization of this research and the implementation of the WKIZ scale, the main objective of the research was met, which is determining attitudes of the students from the Faculty of Philosophy and the Faculty of Fine Arts about Wikipedia as a source of knowledge for the academic purposes. Using the results, one can get answers on the research hypotheses. Namely, students point out that the information on Wikipedia can be false (46,2%); that they compare information from Wikipedia to other sources in order to check its validity (46,2%) and that they doubt the quality and reliability of the articles from Wikipedia (37,6%), therefore it can be concluded that the first hypothesis of the research which assumes that *students critically approach the content on Wikipedia and have doubts considering its quality and reliability is confirmed.*

The results of this research show that students with higher average grades more often use the official literature and magazines and they find them more relevant than Wikipedia (M=2,34), they are aware that the information on Wikipedia can be false (M=4,46) and when using Wikipedia they more often notice false information (M=3.52) than respondents with lower average grades (M=2.15; M= 4.01 and M=3.44), which confirms the second hypothesis of the research *It is assumed that students with higher average grades have more critical attitude about Wikipedia as a source of knowledge unlike students with lower average grades.*

The third hypothesis of the research *It is assumed that female students have a more critical attitude than male students* is not confirmed because although male students use Wikipedia more, they also agreed more with the statement which is related to the false information on Wikipedia (M=4,38) than female respondents (M=4,13), therefore they show more critical attitude about this source of information.

The research results cannot be considered as general because of the limited sample, but they can contribute to the research and findings considering the implicit policy and practice among students related to the use of Wikipedia in an academic context. Since the assessment WKIZ scale was anonymous, it is assumed that students were honest and that results reflect the actual attitudes towards the Internet encyclopedia. Beside the limited sample, another limitation of this research is the fact that we did not compare students' and professors' attitudes which would create a more complete picture. Despite given limitations this research can be used by professors to inform themselves about students' preferences considering Wikipedia in an academic context.

References

Ben-Zvi, D. (2007). Using wiki to promote collaborative learning in statistics education. *Technology Innovations in Statistics Education*, 1(1), 1–18.

- Biddix, J. P., Chung, J.C., & Park, H. W. (2011). Convenience or credibility? A study of college student online research behaviors. *The Internet and Higher Education*, 14(3), 175–182.
<https://doi.org/10.1016/j.iheduc.2011.01.003>
- Carroll, J-A., Diaz, A., Meiklejohn, J., Newcomb, M., & Adkins, B. (2013). Collaboration and competition on a wiki: The praxis of online social learning to improve academic writing and research in under-graduate students. *Australasian Journal of Educational Technology*, 29(4), 513-525.
- Crovitz, D. & Scott, S. W. (2009). Wikipedia: Friend, Not Foe. *English Journal*, 98(3), 91–97.
- Dagiene, V., & Kurilovas, E. (2010). Web 2.0 Technologies and Applications in the Best Practice Networks and Communities. *Informatics in Education*, 9(2), 185–197.
- Ducate, L., Anderson, L., & Moreno, N. (2011). Wading through the world of wikis: An analysis of three wiki projects. *Foreign Language Annals*, 44(3), 495–524. <https://doi.org/10.1111/j.1944-9720.2011.01144.x>
- Eijkman, H. (2010). Academics and Wikipedia: Reframing Web 2.0 as a disruptor of traditional academic power-knowledge arrangements. *Campus-wide information systems*, 27(3), 173–185. <https://doi.org/10.1108/10650741011054474>
- Faletar-Tanacković, S., Djurđević, A., & Badurina, B. (2015). Wikipedia in academic community: perceptions and experiences of students and teachers. *Libellarium: journal for the research of writing, books, and cultural heritage institutions*, 8(2), 161–199.
<http://dx.doi.org/10.15291/libellarium.v8i2.234>
- Feng, S., & Beaumont, C. (2010). Evaluating the use of a wiki for collaborative learning. *Innovations in Education and Teaching International*, 47(4), 417-431.
<http://dx.doi.org/10.1080/14703297.2010.518428>
- Foley, B., & Chang, T. (2006). Wiki as a professional development tool. *AERA 2006*, 1-13.
- Hadjerrouit, S. (2012). Investigating Technical and Pedagogical Usability Issues of Collaborative Learning with Wikis. *Informatics in Education*, 11(1), 45–64.
- Hazari, S., North, A., & Moreland, D. (2009). Investigating Pedagogical Value of Wiki Technology. *Journal of Information Systems Education*, 20(2), 187–198.
- Head, A., & Eisenberg, M. B. (2010). How today’s college students use Wikipedia for course-related research. *First Monday*, 15(3). Retrieved from <http://firstmonday.org/article/view/2830/2476>
- Kittur, A., Shu, B., & Chi, E. H. (2008). Can You Ever Trust a Wiki? In Begole, B., McDonald, W. D. (Eds) *Proceedings of the ACM 2008 conference on Computer Supported Cooperative Work*. ACM, New York, NY, USA, 37–46.
- Konieczny, P. (2012). Wikis and Wikipedia as a teaching tool: five years later. *First Monday*, 17(9). Retrieved from <http://firstmonday.org/ojs/index.php/fm/article/view/3583>.
- Konieczny, P. (2014). Rethinking Wikipedia for the Classroom. *Contexts*, 13(1), 80-83.
<https://doi.org/10.1177/1536504214522017>
- Lane, B. (2014). Wikis as an efficient means of student collaboration in completing coursework. *AISHE-J: The All Ireland Journal of Teaching and Learning in Higher Education*, 6(2), 1–13.
- Leitch, T., & Leitch, M. T. (2014). Wikipedia U: Knowledge, Authority, and Liberal Education in the Digital Age. Johns Hopkins University Press, Baltimore.
- Lund, A. (2008). Wikis: a collective approach to language production. *ReCALL*, 20(1), 35–54.
<https://doi.org/10.1017/S0958344008000414>
- McNely, B. J., Teston, C. B., Cox, G., Olorunda, B., & Dunker, N. (2010). Digital publics and participatory education. *Digital Culture & Education*, 2(2), 144–164.
- Meishar-Tal, H. (2015). Teachers' use of Wikipedia with their Students. *Australian Journal of Teacher Education*, 40(12), 126–140. <https://doi.org/10.14221/ajte.2015v40n12.9>
- Menchen-Trevino, & Hargittai, E. (2011). Young adults’ credibility assessment of Wikipedia. *Information, Communication & Society*, 14(1), 24–51.
<http://dx.doi.org/10.1080/13691181003695173>

- Miller, J. (2014). Building academic literacy and research skills by contributing to Wikipedia: A case study at an Australian university. *Journal of Academic Language and Learning*, 8(2), 72–86.
- Okoli, C., Mehdi, M., Mesgari, M., Nielsen, F., & Lanamäki, A. (2014). Wikipedia in the eyes of its beholders. *Journal of the American Society for Information Science and Technology*, 65(12), 2381–2403. <http://dx.doi.org/10.1002/asi.23162>
- O'Neill, M. (2005). Automated use of a wiki for collaborative lecture notes. *ACM SIGSCE Bulletin*, 37(1), 267–271.
- Purdy, P. J. (2010). Wikipedia Is Good for You!? In Lowe, C., Zemliansky, P. (Eds), *Writing Spaces: Readings on Writing, 1*. Parlor Press, England, UK, 205-225.
- Sahut, G. (2014). Les jeunes, leurs enseignants et Wikipédia : représentations en tension autour d'un objet documentaire singulier, *Documentaliste-Sciences de l'Information* 2(51), 70-79. <http://dx.doi.org/10.3917/docs.512.0070>
- Schwartz, L., Clark, S., Cossarin, M., & Rudolph, J. (2004). Educational wikis: Features and selection criteria. *International Review of Research in Open and Distance Learning*, 5(1), 1–6.
- Selwyn, N., & Gorard, S. (2016). Students' use of Wikipedia as an academic resource — Patterns of use and perceptions of usefulness. *The Internet and Higher Education*, 28, 28–34. <http://dx.doi.org/10.1016/j.iheduc.2015.08.004>
- Surowiecki, J. (2004). *The wisdom of crowds: Why the many are smarter than the few*. Abacus, London.
- Wang, J., Zou, B. Wang, D., & Xing, M. (2013). Students' perception of a wiki platform and the impact of wiki engagement on intercultural communication. *System*, 41(2), 245–256. <https://doi.org/10.1016/j.system.2013.04.004>
- Wheeler, S., Yeomans, P., & Wheeler, D. (2008). The good, the bad and the wiki: Evaluating student-generated content for collaborative learning. *British Journal of Educational Technology*, 39(6), 987–995. <https://doi.org/10.1111/j.1467-8535.2007.00799.x>
- Yan, A. Y., Tian, S. W., Vogel, D., & Kwok, R.C.W. (2010). Can learning be virtually boosted? An investigation of online social networking impacts. *Computers & Education*, 55(4), 1494–1503. <https://doi.org/10.1016/j.compedu.2010.06.015>
- Zheng, B., Niiya, M., & Warschauer, M. (2015). Wikis and collaborative learning in higher education. *Technology, Pedagogy and Education*, 24(3), 357–374. <http://dx.doi.org/10.1080/1475939X.2014.948041>
- Zickuhr, K. & Rainie, L. (2011). *Wikipedia, past and present*. Pew Internet and American Life Project. Retrived from <http://www.pewinternet.org/2011/01/13/wikipedia-past-and-present/>