

REFERENCING IN CROATIAN SCIENCE AND HIGHER EDUCATION

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Abstract

Referencing refers to any form of citing a source in a document. References can be detailed or non-detailed. The sources to which the references refer can be diverse, and regardless of the types, they can be in analogue or digital form. Anonymous sources are undesirable and should be avoided as much as possible. This means putting more effort into searching for alternative sources and finding relevant ones, with a preference for the primary ones. If the author does not state the source from which he took some information, then it is assumed that it is the author's original work, and if it is not already taken from an unlisted source, then we are talking about plagiarism and its possible consequences and sanctions. Referencing is necessary not only when using other author's texts, but also when using their tables, graphs, figures, diagrams, etc., anything that is not the result of the author's work. Many styles are used for reference, but most of them can be grouped into three main types: text referencing, footnote referencing, and numerical referencing. The most famous styles are Harvard, American Psychological Association (APA), Modern Language Association (MLA), Vancouver, Institute of Electrical and Electronics Engineers (IEEE), Oxford, and Chicago. Regardless of what type and style of referencing are used, it is important to be clear about what is taken from external sources and what is the author's original contribution. Referencing is often a tedious process, requiring a lot of time and the necessary consistency of using the same style within a single document, so the software can help us greatly in this task. This article presents some commonly used reference management programs. Three studies were conducted, the results of which are presented in the article. The first is a study on the use of reference styles of Croatian scientific and professional journals available through Hrčak - Portal of scientific journals of Croatia, using their instructions for authors. The second research is the analysis of instructions for students of faculties and departments of Croatian universities. The third survey was conducted through a questionnaire completed by one hundred students, which provided insight into their knowledge and practice of using reference styles and accompanying software.

Keywords: Referencing Styles, Science, Education, Publications, Students.

1 INTRODUCTION

Referencing refers to any form of citation of articles whose parts the author uses in his work, indicating the sources used. There are various written and electronic forms of sources. Written forms are books or parts of books, scientific and professional papers, laws, norms, official reports, newspaper articles, etc. Electronic forms of sources are all listed sources in digital form, then audio and video materials and various other contents retrieved or downloaded from the Internet. References can be detailed or simple. A detailed reference describes in detail each source from which a part is taken or inspired by a source, and a simple reference can be found in the text of the paper. It is very important to avoid anonymous sources, but that means a more detailed search for alternative sources and finding relevant ones. When an author refers to a source used in the work of another author, and not directly to the source itself, then we are talking about secondary referencing. This form of referencing is also desirable to avoid, i.e. authors should use sources to which they had direct access. If the author does not state the source from which he took some information, then it is assumed that it is the author's original work. If it is not so, then we are talking about plagiarism and possible consequences and sanctions for a plagiarist. So, by plagiarism, we mean taking over someone's ideas, thoughts, attitudes, research results, and the like, without naming the real author - thus we appropriate that work or part of it as our own. Referencing is also necessary when using other people's tables, graphs, images, diagrams, or similar content, which are not the result of the author himself. Referencing is also used to acknowledge the contribution of other authors (in terms of inspiration or direction) and to support a claim.

Some referencing styles such as APA, MLA, Vancouver, IEEE, have their origins in the 20th century, while the Harvard and Oxford styles are somewhat older and date from the 19th century. Harvard was first used in the work "*Maturation, fecundation, and segmentation of Limax campestris*" by Edward Laurens Mark in 1881 [1]. In this paper, the author laid the foundations for correct and complete referencing, and the literature was arranged alphabetically for the first time. It is not known how this style

got its name Harvard, but it is interesting to note that it was not officially accepted as the only reference system at Harvard University. The Oxford system had a similar development. Horace Hart, who worked for publishing houses in the UK for thirty years, developed a system of rules and standards that acted as guides in writing and printing various types of papers. In 1864, he and his colleagues compiled the first version of the list of rules, which were constantly updated and firstly published in 1893. This first edition was called Hart's Rules [2]. Eventually, the system was named after the publishing house that published it - Oxford University Press. The Oxford system belongs to the so-called footnote systems, and it is they who have the longest history of referencing. In his work "*The Footnote: A Curious History*" Grafton [3] gives a historical overview of the development of this referencing system by considering various forms of footnote systems over the centuries. Thus, various forms of footnote citation and referencing can be found in works dating from the 12th century. The importance of these systems grew especially after the invention of the printing press in the 15th century, and until the end of the 19th century when the already mentioned systems appeared, they were the only form of citation and referencing.

Although we have thousands of referencing styles today, they can all be categorized into three or four main ways, and the differences are in the less important details of presentation and formatting in the detailed presentation of references: Author, Author-Year, Footnotes, and Numerical. The Author and the Author-Year differ only in detail whether the reference within the text shows only the author's last name or also the year of publication. The most famous representative of the author only style is the Modern Language Association (MLA) [4], the author-year style are Harvard [5] and APA [6], the numerical Vancouver [7] and IEEE [8], and the footnotes Oxford [9]. Chicago style (also known as Turabian) is a special style because it belongs to two types of referencing: it resembles Harvard style if its author-year form is used, but also Oxford style if it is referenced by footnotes. It was promoted by the Chicago University Press and has officially existed since 1906 [10].

2 METHODOLOGY

Three studies were conducted. The first is a study on the use of reference styles of Croatian scientific and professional journals available through Hrčak [11], the central portal of Croatian scientific journals, using journal's instructions for authors. On 20th May 2021. there were 650 journals, divided into nine areas. Besides information on the areas covered by the journal, information on the required style of referencing was taken from the instructions for authors of each journal. Most often, the instructions did not name the referencing style, but more or less detailed instructions from which the required style is recognized.

The second research is similar, but now the objects of observation are universities. The analysis of instructions for students of faculties and departments of nine Croatian was carried out and the representation of reference styles at universities or their constituents was determined, whether a university is integrated or consists of independent components (faculties) that autonomously determine the required style of referencing.

The third survey was conducted through the questionnaire completed by one hundred students in Croatia, which provided insight into their knowledge and practice of using reference styles and accompanying software.

3 RESULTS

The results of the three surveys will be presented below. There is no generally accepted division of science into scientific fields in the world, although these different divisions are very similar due to the very nature of science. Science is most often divided into the following areas [12]: Natural sciences, Engineering and Technology, Medical and Health Sciences, Agricultural Sciences, Social Sciences and Humanities. In Croatia, three more areas are officially added [13]: Artistic area, Interdisciplinary areas of science and Interdisciplinary areas of art. the divisions within the eponymous areas do not coincide entirely. For example, in the first division [12] Computer and information sciences are within the Natural sciences, while in the Croatian division [13] the field of Computer sciences is within the field of Engineering and technology, and the field of Information sciences is within the field of Social sciences.

3.1 Referencing in Croatian scientific and professional journals

To ensure the consistency of appearance and compliance with established practice in a scientific field, scientific and professional journals usually strictly define all the parameters of the design of documents or articles, including the style of referencing. However, most often they do not define it by name but descriptively. The research of Croatian scientific and professional journals yielded the results presented in Table 1 and Figure 1.

Table 1. Representation of referencing styles in Croatian scientific and professional journals

| Sciences\Style | Author | Author, Year | Footnote | Numeric | Not Def. | All |
|-----------------------|--------|--------------|----------|---------|----------|-----|
| Natural | 2 | 26 | 5 | 12 | 13 | 58 |
| Technology | 1 | 25 | 8 | 27 | 9 | 70 |
| Medical | 0 | 15 | 1 | 37 | 8 | 61 |
| Agricultural | 1 | 31 | 2 | 7 | 2 | 43 |
| Social | 3 | 97 | 26 | 16 | 25 | 167 |
| Humanities | 12 | 59 | 65 | 8 | 21 | 165 |
| Art | 8 | 12 | 17 | 2 | 5 | 44 |
| Interdisc. (Sciences) | 2 | 19 | 7 | 8 | 4 | 40 |
| Interdisc. (Art) | 0 | 0 | 1 | 0 | 1 | 2 |
| Total | 29 | 284 | 132 | 117 | 88 | 650 |

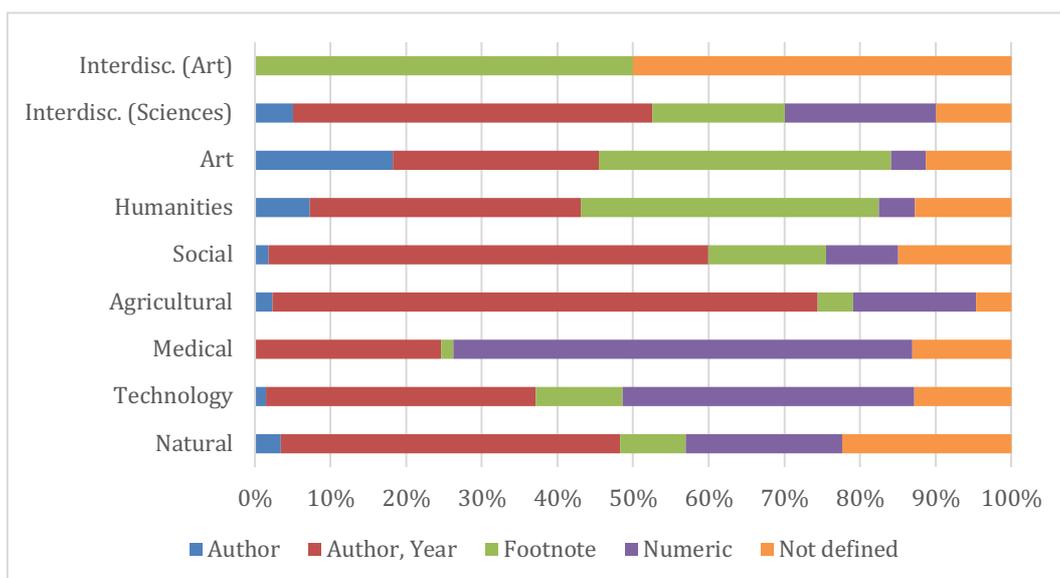


Figure 1. Representation of references styles in Croatian scientific and professional journals

Most journals are published in the field of social sciences (167 or 26%), followed by the humanities with only two journals less and 25% of the total. This is followed by technical sciences which have 70 journals, which is 11%. The fields of biomedicine and health and natural sciences have an equal share of 9% of journals. Also, the arts and agricultural sciences share a 7% share of the total. In the end, the least represented are the interdisciplinary field of science with 6% and the interdisciplinary field of art which has only 2 journals.

Each area has its own most common style of referencing, which is expected to be used by the authors. In general, the author-year style is mostly used, but in the medical sciences and technology, the numerical style predominates, while the use of footnotes for reference prevails in the humanities.

3.2 Referencing at Croatian universities

There are nine universities in Croatia, and each of them has its faculties and/or departments. The newer ones are more integrated due to the force of legal regulations, i.e. they have only university departments (without quite autonomous faculties), so they defined one type of referencing (such as the University of Dubrovnik, University of Slavonski Brod and the University of the North). Other universities have faculties as components so the referencing rules have been defined by the faculties themselves.

Table 2. Representation of referencing styles at Croatian universities

| University/Style | Author | Author, Year | Footnote | Numeric | Not Def. |
|------------------|--------|--------------|----------|---------|----------|
| Dubrovnik | 0% | 100% | 0% | 0% | 0% |
| Osijek | 0% | 47% | 6% | 24% | 24% |
| Pula | 0% | 33% | 0% | 0% | 67% |
| Rijeka | 0% | 29% | 6% | 18% | 47% |
| Sjever | 0% | 0% | 0% | 0% | 100% |
| Slavonski Brod | 0% | 0% | 0% | 100% | 0% |
| Split | 0% | 18% | 12% | 29% | 41% |
| Zadar | 0% | 67% | 33% | 0% | 0% |
| Zagreb | 0% | 52% | 6% | 19% | 23% |

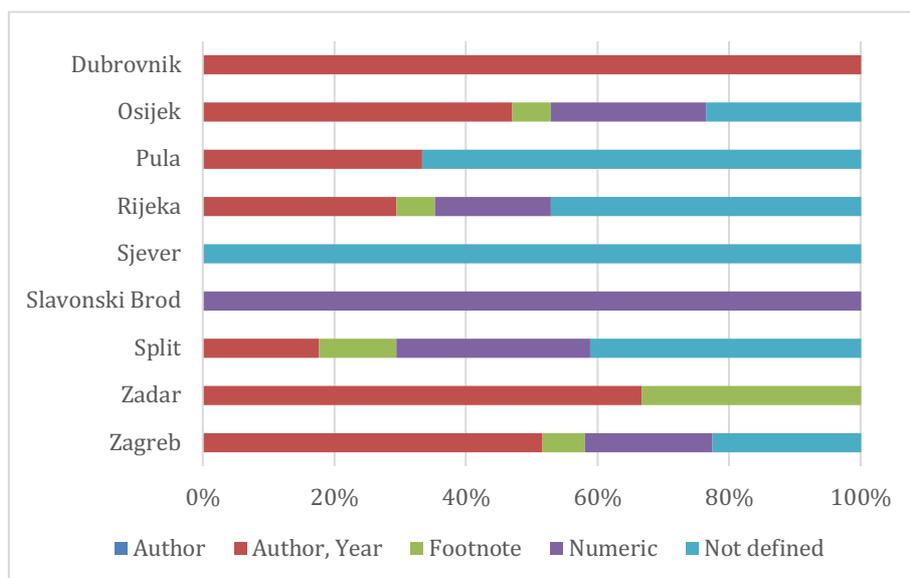


Figure 2. Representation of referencing styles at Croatian universities

From the data collected by the research and presented in Table 2 and Figure 2, it can be concluded that the Author-Year style is relatively mostly used in Croatian universities. The use of numerical style is less represented, and an unusually large number of universities or their constituents do not have a defined mandatory style.

3.3 Referencing in Croatian students

With a short survey questionnaire on an unrepresentative sample of students, we wanted to get an indication of the knowledge of referencing and habits of using referencing styles and referencing software of the student population. The questionnaire was sent from several student profiles to several social networks according to the principle of asking for the questionnaire to be forwarded to acquaintances. For this opportunity, we presented the answers to three of them (Tables 3-5), responding to the questions about when and on what circumstance the students were introduced to referencing and

what style they used to use. Out of 100 respondents, 15 are men, 85 women, the majority aged 18 to 22 (66%), and the rest aged up to 27 who study in several Croatian university cities.

Table 3. Survey question: Where did you encounter referencing?

| | |
|--------------------------------|-----|
| Elementary school | 3 |
| High school | 47 |
| Study | 36 |
| On its own | 3 |
| I don't know anything about it | 11 |
| Total | 100 |

Table 4. Survey question: What led you to use referencing software?

| | |
|-----------------------|-----|
| Seminar | 4 |
| Professor | 4 |
| Simplicity | 4 |
| I do not use software | 88 |
| Total | 100 |

Table 5. Survey question: What style of referencing do you use?

| | |
|--------------------------|-----|
| Author-Year | 63 |
| Numeric | 12 |
| Footnote | 10 |
| I do not use referencing | 15 |
| Total | 100 |

As Tables 3-5 show, students became acquainted with referencing mainly in high school (47%), somewhat less during their studies (36%). They do not use software to a large extent (88%) and mostly use Author-Year referencing (63%). The survey is an indicator that students know very little about referencing as well as software that could help them do so. We conclude that it is very justified to conduct such a survey on a representative, stratified sample of the student population in Croatia, and it would probably be useful to do so more widely, at least within the EU.

4 CONCLUSIONS

Referencing is not just the knowledge and technique of citing the sources that the authors use. It has a much deeper and more important meaning for every pupil, student, writer... Anyone who writes seminars, final, diplomas, or some other professional, scientific, research papers should know how to reference. Although today's digital age is forcing people to encounter information technologies, tools, and resources from all sides, it seems that the levels of information and information literacy are still quite low. Namely, the results of the presented research show that during education, students did not hear enough about the need and ways of referencing.

There are too many styles of proper referencing. It is difficult to know a dozen of them in detail. Usually, every expert and scientist know a couple of those who are common in their professional and scientific domain. There is no standard way of referencing in the academic world, but we believe that there is a need for standardization. This could be difficult to implement at the formal-legal level, and even if it were to be implemented in this way, it would probably encounter great resistance from publishers and editors with the argument of suppression of academic and literal freedom. However, there is a possibility that

over time, with the increasing interdisciplinarity of science, a trend of decreasing the number of styles used will start, that some variants of styles will cease to be used, that they will become extinct like many languages now considered "dead".

The research has shown that at the moment there is a great need for a compulsory course in Croatian university studies in which one would study scientific research, academic integrity, and referencing. Now it is a sporadic case in studies, it is often part of the topics of elective courses and is left to the professors, i.e. how important they consider it to be. Future graduates need knowledge of proper writing at the beginning of their studies. Moreover, this knowledge needs to be incorporated into the educational base, syllabuses for next generations from an early age, for young people to adopt it as a norm by the time they come to study.

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