





The first year of the ST-OPEN overlay+ journal

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Introduction

The ST-OPEN journal was established in 2018, but it took a year and a half to set up the administrative and technical foundations of the journal. The first series of articles were published in May 2020, and the first volume ended up with 3 editorials and 12 original scientific articles from various scientific fields and disciplines. This affirmed the main strategy set for the journal by its Editorial Board – that ST-OPEN is a multidisciplinary overlay+ journal which will mostly contain master's theses transformed into scientific articles through two rounds of peer-reviews – intramural and extramural, and translated into English.

By working with students on publishing articles from their theses, two goals are achieved: University of Split's overall quality of research is increased, and its role as a research university is strengthened [1], but more importantly, students are encouraged to enter

the world of scientific publishing. This is done through an author-helpful editorial policy – a procedure with which most of the articles received were pre-reviewed intramurally and improved before being sent out for extramural review [2].

Finding potential submissions

Despite the problems of accessibility to graduate theses deposited in the University's repository and the discontinuation of students' official e-mails after graduation, we identified and assessed 74 potential articles for the first volume of ST-OPEN. Most of them (82.4%) were based on graduate theses, one (1.4%) was based on a conference paper, one (1.4%) on a previously published manuscript, and 14.9% were independent works directly submitted to the journal. Almost two-thirds (62.2%) of these considered papers were written in 2019, followed by 17.6% written in 2020, and 9.5% written in 2018. About two-thirds (67.6%) of these papers were deposited in the University of Split repositories, one paper



(1.4%) was deposited in a different Croatian repository, and less than a third (31.1%) were not deposited in any repository. More than one third (35.1%) of these papers were based on graduate theses from the Faculty of Humanities and Social Sciences, followed by less than one-sixth (14.9%) graduate theses from the School of Medicine. Less than one-tenth (8.1%) were from the Faculty of Chemistry and Technology and from the Department of Forensic Sciences, 6.8% were from the Department of Health Studies and 2.7% from the School of Electrical Engineering, Mechanical Engineering and Shipbuilding. Also, there was one (1.4%) considered paper from each of these faculties: Faculty of Economics, Faculty of Civil Engineering, Architecture and Geodesy, Faculty of Maritime Studies, Faculty of Law, Faculty of Science, Department of Professional Studies and Arts Academy.

The graduate theses deposited in repositories were mostly in limited access (39.2%), which means that they were accessible only to users from the parent institution, or in open access (35.1%), with entire theses texts fully accessible under a Creative Commons (CC) license. Also, one (1.4%) graduate thesis was in closed access, i.e., the access was closed to all except the administrator or the editor of the repository, and one (1.4%) was temporarily closed, which applies to those theses which will become open (accessible) after a period of time. There was no information for 5.4% of the theses, mainly because they were not deposited in the repositories.

About half (48.6%) of all considered papers were identified by the Editorial Office, one-third (32.4%) were recommended by the members of the Editorial Board, and almost a fifth (18.9%) of them were directly submitted by authors. Unfortunately, due to the COVID-19 pandemic, we could not work with the Student Board, so none of the considered papers was recommended through this body. Currently, the editorial process of most (81%) of these papers is finalized, and the others are still at some stage of the editorial process, such as the transformation into a journal article, review, copyediting or production. The editors rejected 23 (31.1%) of the articles (15 were rejected directly by the editors, 6 based on authors' non-cooperation, and 2 based on the reviewer's recommendation), authors of 25 (33.8%) considered articles opted out of the publishing during the transformation and review processes, and 12 (16.2%) papers were published. These data illustrate how hard and uncertain it is to obtain good-quality articles in a journal that strives to transform students' theses into scientifically valuable research articles.

The content of the first volume

The first article – "Accuracy of measurements performed on digital panoramic radiographs with and without an extra-oral calibration object", was authored by Anita Ivanović and Frane Mihanović [3]. They reported on the accuracy of measurements in vertical and horizontal directions using an extra-oral calibration object placed in different positions on the panoramic radiographs.

Ivan Buljan and Esther Park investigated what affects the desire of undergraduate and graduate medical students to choose research careers after completing their studies [4]. They showed that students exposed to or participating in research are more likely to de-

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cide on pursuing a career in research. These data can help medical schools create a better scientific and research atmosphere for students.

The third article "The Moral Foundations theory in the context of a political scandal: Two cross-sectional studies in Croatia" by Darko Hren, Ivan Buljan and Ana Marušić, was based on an online survey in which over 4 thousand individuals were questioned about their moral foundations to see whether they were affected by major political scandals [5]. The questionnaires were distributed in 2009 and 2014, before and after a major political scandal relating to the arrest of the Croatian prime minister in 2010. The authors stress that this is, to the best of their knowledge, the only study that dealt with the changes in moral foundations after political scandals.

Andrea Kolić, Ivana Jerković and Šimun Anđelinović analyzed the bilateral asymmetry and sexual dimorphism of thirteen measurements taken from handprints in their article [6]. They showed that, among the Croatian population, the sex of a person could be determined with a high degree of accuracy based on their full handprint. This novelty tool can be used to profile perpetrators in the future [6].

Mislav Burazer gave a new perspective on the world-famous case of the terrorist attack committed by Andreas Breivik [7]. Burazer compared multiple hypothetical case studies to outline how the legal procedure for the Breivik case would be undertaken in different countries and how this would affect Breivik's punishment. Furthermore, Burazer showed a difference in both procedure and results concerning criminal (in)sanity between modern legal systems based on civil rights and those based on religion or tradition.

The research undertaken by Jelena Čeko and Ina Reić Ercegovac examined the connection between family relations, depression, and test anxiety in female and male primary school pupils in the fourth and seventh grade [8]. The authors found that depression and test anxiety were more common among older female pupils, while both factors were stable among male pupils regardless of age. The relationship between the mother and the father proved to be a relevant factor in developing both depression and test anxiety. These results can prove useful in preventing mental health issues.

Vedran Mijanić and Lucija Sokanović used two case studies in their article to demonstrate how blurred the line between co-perpetration and aiding and abetting is in the criminal offence of robbery in Croatia, as they found that criminal law left space subject to manipulation in this regard [9]. The authors stated that an uneven approach to specific cases could lead to citizens being unequal before the law, which diminishes the rule of law by endangering legal security.

The next article – "Synthesis of quaternary ammonium salts based on quinuclidine-3-ol and pyridine-4-aldoxime with alkyl chains" was the result of the research done by the student Doris Crnčević while creating her master's thesis at the University of Split's Faculty of Science under the supervision of Renata Odžak [10]. They synthesized quaternary ammonium salts that have significant biological application potential in biomedicine. The synthesized compounds contain biologically active structures of quinuclidine and pyri-



dine with antibacterial and bacterial activity. This means they could possibly be used in fighting pathogens such as the SARS-CoV-2 virus.

The study by Zdenka Sule and her supervisor Ana Marušić looked at the professional relationships between nurses and physicians [11]. A questionnaire survey that included 94 nurses employed at the University Hospital Centre Split showed that, despite their contemporary professional autonomy, nurses still accepted the physicians' decision in order to avoid possible conflict, even when the superordinate physician's approach was unprofessional or scientifically unjustified.

The article by Sanda Ham, "Croatian Shtokavian grammar books: Overview of the history of grammar books on the Croatian Shtokavian literary language with an outline of their periodization and classification", presented a historical overview of Croatian Shtokavian grammars from 1604 until today and shows a clear continuity of the Croatian Shtokavian literary language [12]. This is the first article on this topic published in English.

Ivna Ćavar and Darko Kero from the School of Medicine analyzed samples of gingival tissue obtained from 20 healthy donors and 20 patients suffering from advanced generalized periodontitis [13]. They demonstrated that hyaluronan and its main receptor CD44 could potentially regulate the inflammatory response in advanced generalized periodontitis [13].

In her article "Croatian leadership and Jews in the 1990s", Andrijana Perković Paloš revealed the background behind the accusations directed at the Croatian leadership headed by president Franjo Tuđman in the 1990s [14]. By analyzing archival materials, public statements by the first Croatian president Dr Franjo Tuđman, and his book "The Wastelands of Historical Reality", the author successfully challenged those accusations, demonstrating they were nothing more than Serbian propaganda directed at stumping Croatian-Israelian relations and Croatia's international reputation [14].

Visibility

The Journal's publishing format is classified as Diamond Open Access, meaning that it is open and free for both readers and authors. This is meant to increase both the accessibility and use of published materials. The increase in visibility was demonstrated by a number of independently submitted manuscript from the countries in the region, as well as globally (we received two manuscripts from Indonesia).

Student research visibility is one of our top priorities. To view our achievements in this regard, we extracted and presented data on visits, views and downloads of the Journal's articles (**Table 1** and **Table 2**). Two data sources were considered: the ST-OPEN website, which uses the Open Journal System (OJS), and the repository for scientific and professional articles Hrčak (https://hrcak.srce.hr), where the Journal is indexed. We used the internal analytics tool available to Editors in OJS to determine abstract views, file views (PDF downloads), journal main page visits, and issue table of contents page visits.

As for the portal Hrčak, we used publicly available data gathered by their own internal analytics tool: article visits, full-text visits (available on each article's own URL page), as



Table 1. ST-OPEN statistics per articles

	ST-OPEN – Hrčak statistics per article*		ST-OPEN OJS website statistics per article [†]			
Title of editorial/article	Article visits	Full-text visits (downloads)	Inclusion date	Article visits	Full-text visits (downloads)	Inclusion date
ST-OPEN is an overlay+ journal	65	28	06. 10. 2020	147	205	18. 05. 2020
ST-OPEN: Innovation based on ancient traditions	62	26	06. 10. 2020	71	67	18. 05. 2020
Legal aspect of institutional thesis repositories in the Republic of Croatia	91	31	06. 10. 2020	91	85	18. 05. 2020
Accuracy of measurements per- formed on digital panoramic radio- graphs with and without an extra-oral calibration object	143	62	06. 10. 2020	178	170	18. 05. 2020
Predictors of medical student's research degree pursuit: a convenience poll pilot study	106	49	06. 10. 2020	154	114	18. 05. 2020
Moral Foundations theory in the con- text of a political scandal: Two cross sectional studies in Croatia	76	30	06. 10. 2020	175	179	18. 05. 2020
Sex estimation from handprints in a Croatian population sample: devel- oping a tool for sex identification in criminal investigations	113	57	06. 10. 2020	182	218	18. 05. 2020
The Breivik case and the comparative issues of criminal (in)sanity	194	88	06. 10. 2020	153	187	30. 07. 2020
Explaining students' test anxiety and depression: The role of family interaction quality	98	35	06. 10. 2020	98	97	18. 08. 2020
Delimitation of co-perpetration from aiding and abetting in the criminal offence of robbery	132	62	13. 10. 2020	114	57	13. 10. 2020
Synthesis of quaternary ammonium salts based on quinuclidin-3-ol and pyridine-4-aldoxime with alkyl chains	113	59	20. 11. 2020	69	70	20. 11. 2020
Nurse in a team: cross-sectional study of nurses' opinions on physi- cian-nurse relationship	65	26	01. 12. 2020	61	50	01. 12. 2020
Croatian Shtokavian grammar books: overview of the history of grammar books on the Croatian Shtokavian literary language with an outline of their periodization and classification	74	32	17. 12. 2020	70	76	17. 12. 2020
Correlation of the expression of hyal- uronan and CD44 with the presence of gingival inflammatory infiltrate in advanced generalized periodontitis	69	29	22. 12. 2020	85	59	22. 12. 2020
Croatian leadership and Jews in the 1990s	130	59	31. 12. 2020	98	165	31. 12. 2020
Overall article statistics:	1531	673	N/A [‡]	1746	1799	N/A

^{*}Data from October 6, 2020, when the first Issue was first published on Hrčak, until March 1, 2021. Hrčak automatically excludes March 1 from the statistics count, as it generates data on a monthly basis.

†Data included is from May 18, 2020 (when the first content was published) until March 1, 2021. The dates of inclusion for

well as total journal visits and total full-text visits. Article visits, abstract visits, downloads, and file views are relative to their publication date. The first issue was included in Hrčak on October 6, 2020, after which some articles were already published at the OJS website. As Hrčak's own website states, robot visits, journal administrator visits, and repetitive ac-



[†]Data included is from May 18, 2020 (when the first content was published) until March 1, 2021. The dates of inclusion for each editorial or article are also taken into account. March 1 data was excluded to correlate the statistics to Hrčak's own statistics time span and monthly data gathering basis. ‡Not applicable.

cess from the same IP address are excluded from the count. Overall journal and issue visits include article and full-text visits.

The number of downloads and journal visits in **Table 1** indicate ST-OPEN's popularity, especially since the timespan included for the OJS website was only about 10 months, and even less for Hrčak, only 5 months. In **Table 2** we added the same statistical data from both sources, Hrčak article visits and OJS abstract visits, in order to determine overall visits.

Table 2. Overall article and journal statistics

	Hrčak*	ST-OPEN OJS website [†]							
Total full-text visits	Article visits	Total journal visits	Journal main page visits	Issue table of contents page visits					
673	1753	2201	7952	1301					
Overall ST-OPEN OJS website and Hrčak statistics									
Overall article and abstract visits	Overall article full-text and file visits (down- loads)	Overall journal visits (ST-OPEN OJS website and Hrčak)	Overall issue and issue table of contents page visits	91					
3277	2472	10153	3054	178					

^{*}Data are for the period from September 24, 2020 (when the Journal was first published on Hrčak) until March 1, 2021. Hrčak automatically excludes March 1 data from the statistics count, as it generates data on a monthly basis. †Data from May 18, 2020, when the first content was published, until March 1, 2021, for Journal Main Page Visits, and from May 18, 2020 (when the first Issue was published) until March 1, 2021, for Issue Table of Contents Visits. The dates of inclusion for each editorial or article are also taken into account. March 1 was excluded to correlate the statistics to Hrčak's own statistics time span and monthly data gathering basis.

Problems

There are three methods by which the Journal finds quality master's theses and other manuscripts. Firstly, students and other parties interested in submitting their work can do so themselves via ST-OPEN's OJS website. The second method is based on recommendations from the members of the Editorial Board, and the third one relies on Dabar – the public digital academic archive and repository that hosts most of the bachelor's and master's theses from the University of Split [15]. The main criterion for the selection is that the thesis must contain original independent research, although we considered the diversity of and differences between scientific fields and disciplines and their methodologies, so we approached each with appropriate standards. We noticed a few problems that slowed this process, the main one being varying levels of restriction and access listed in **Table 3** below. Because of this, we had to evaluate some theses based only on their publicly available abstracts.

Because of the Policy on Data Protection and Regulation from the University of Split in May 2018 [16], the student administrative offices were unable to send us the students' personal e-mail addresses as their official e-mail addresses were discontinued upon graduation. This posed a problem in communication, and the fact that most students responded positively to our collaboration offers did not help alleviate this problem. We partially managed to overcome this with the help of our Editorial Board, the Student Board, and our personal contact at University's faculties and departments, but this issue persists. We hope that the University of Split's Alumni Associations could serve as a bridge between the students and the Editorial Board.



Table 3. Levels of access restriction in Dabar repository

Open access

Temporarily closed

Authorized access

Limited (institutional) access

Closed access

The entire thesis text is fully accessible under a Creative Commons (CC) license, chosen by the student. If open access is not chosen, the thesis is marked as "Protected"

The work becomes open (accessible) after a period of time, e.g., 6, 12, or 24 months, when it is assigned a CC license

Encompasses the works open to users from the Croatian academic network (CARNet) via an AAI@

The work is accessible only to the users from the parent institution

Closed access

Access is closed to everyone except the administrator and/or the editor of the repository

(Future) editorial research

We believe that research done by members of a journal's editorial board brings about new information on the state and development of journal publishing, but more importantly, improves the work and efficiency of a Journal [17]. To start off, we consider our quest for good graduate theses as a research project on the general quality of graduate theses, their potential for transformation into scientific publications and on the training intervention to introduce students to scientific publishing.

For now, we went through all the master's theses published in 2019 from three of the University's constituents - the Faculty of Humanities and Social Sciences, the Faculty of Economics, and the Faculty of Kinesiology. There were 163 master's theses and 172 bachelor's theses deposited in the Faculty of Humanities and Social Sciences repository, and 206 master's theses deposited in the Faculty of Economics repository and 49 master's theses deposited in the Faculty of Kinesiology repository. Out of those, we picked theses with a potential for interesting articles: 66 master's theses and 21 bachelor's theses from the Faculty of Humanities and Social Sciences repository, 95 master's theses from the Faculty of Economics repository, and 32 master's theses from the Faculty of Kinesiology repository. At the moment, we contacted 57 students from the Faculty of Humanities and Social Sciences with an offer for collaboration. We will publish the outcome of this study at a later time.

Having faced numerous difficulties with accessibility to theses at the University of Split, we wanted to see whether this is a specific problem for our University, so we checked the availability and accessibility of theses at the repositories of other Universities that, along with the University of Split, belong to the SEA-EU Alliance – the Universities of Brest, Cadiz, Gdansk, Kiel and Malta. This Alliance was created to remove academic barriers, to credit recognition, and provide students with recognized joint degrees, as well as to establish the conditions in which a student will be able to freely move between disciplines, languages, and countries [18, 19]. In order to develop such cooperation between these six partner universities, it is also necessary to further develop interconnectedness regarding students' graduate theses in their repositories, which will allow more accessible communication of data that are not publicly available or accessible online. This research project aims to determine the similarities and differences between the methods of depositing theses in the universities' respective repositories and making them publicly available. The preliminary results were presented at The 16th International Conference on Open Repositories [20].



Concluding remarks

During the first year of ST-OPEN, we had to readjust a number of our plans because of circumstances met "at the field". The most serious problems were the low level of accessibility to full texts of the theses in the repositories and a lack of contact details for students who graduated. The selection of potential topics was based mostly on abstracts, which resulted in a high rate of editorial rejections. This was coupled with a high rate of students who declined cooperation or gave up during the process of transforming the theses into articles. Due to the two rounds of reviews (intramural and extramural) the review process turned out to be too long both for editors and the authors. Slowness, unavailability of reviewers, and inadequate reviews by some reviewers added to the complexity of editorial work. Altogether, we published only 12 articles during the first year of existence, but they are all, we believe, interesting and of high technical quality. For the year 2021 we aim to publish up to 20 original scientific contributions, which is considerably less than we originally planned. A significant increase in the number of scientific publications will require improvements in several technical aspects and general features of the University facilities, including the development of a database of graduated students (alumni), and an improvement of the repository framework to provide adequate access. ST-OPEN is ready for these challenges and will work on increasing the quality and visibility of student research at the University of Split, with the goal of helping all those who want to embark on a journey of publishing research. The satisfaction and joy of the students and mentors whose works we published in the first year is sufficient encouragement in overcoming all obstacles ST-OPEN may meet at its journey to excellence.

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