

HOW OJED PUBLISHERS RUN SIX JOURNALS WITH JUST ONE VOLUNTEER.

EXECUTIVE SUMMARY



GOALS

Dr. Glass and his team were looking to simplify production and typesetting for their journals via –

1. Increased standardization of their published papers and reduced production errors.
2. Implementing faster, more cost-effective system for making articles ready for production.
3. Introduction of an XML first product workflow that'd be compliant with JATS standards.

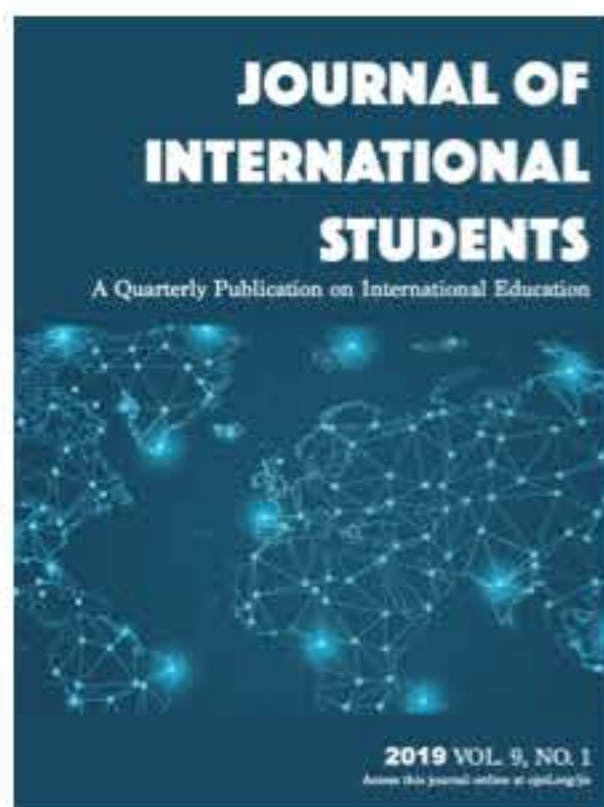
KEY RESULTS

With Typeset, they were able to –

1. Save over **80% of time** and resources spent on production by completely automating conversion of author submissions to published articles.
2. Increase journal readership from Google and Google Scholar with JATS XML.
3. Launch a new design for their article pdfs to improve readership experience.

ABOUT OJED

Open Journals in Education (OJED) is a publisher of six high quality academic journals with a strong focus on quality research in higher education. All OJED journals are Gold Open Access, peer reviewed and indexed in reputable academic databases. The editorial board comprises of international scholars, researchers and leaders in education. Thanks to institutional sponsorship, individual authors are not charged for submissions.



Christopher Glass
Senior Editor

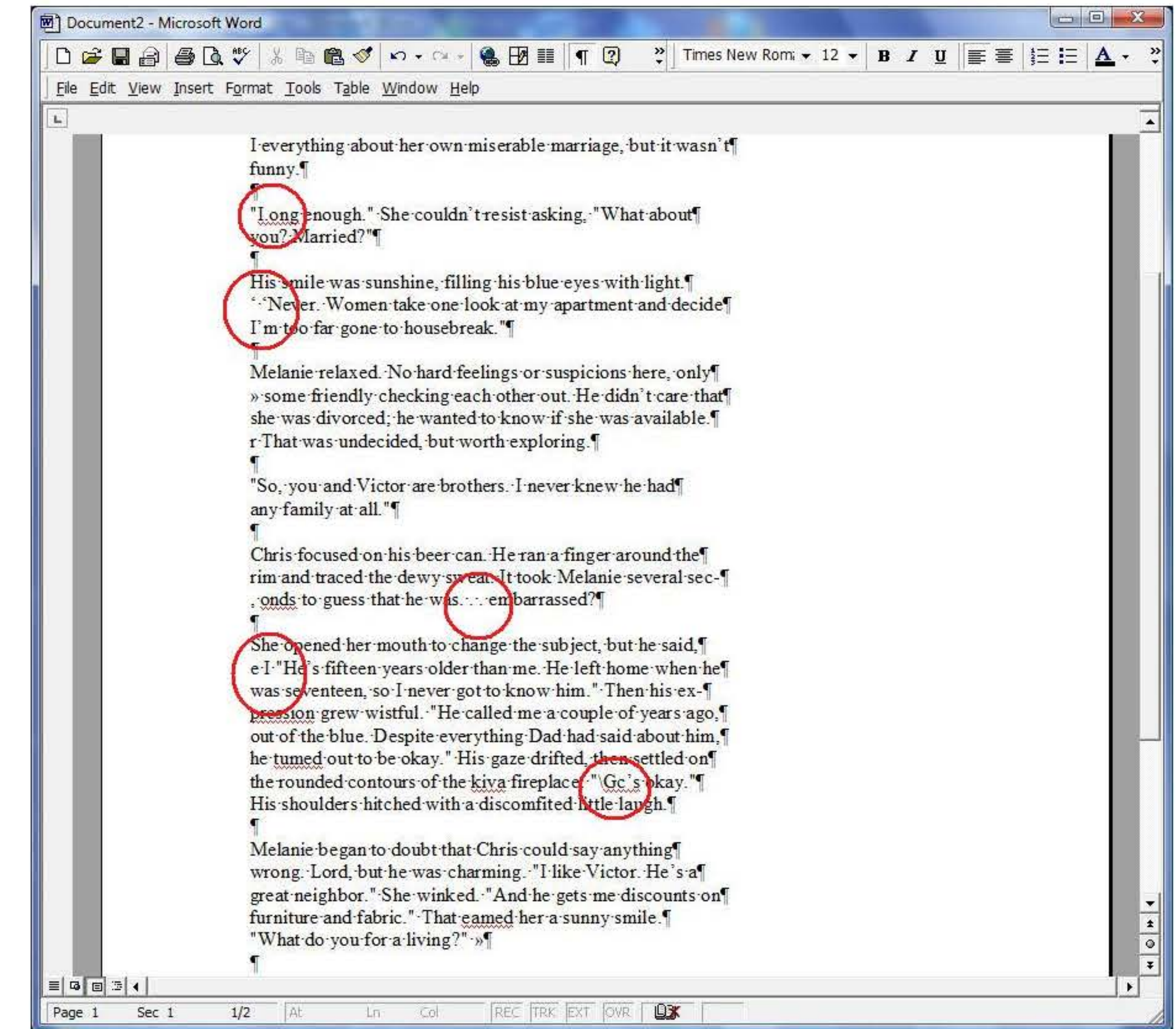
OJED
OPEN JOURNALS IN EDUCATION

CHALLENGES

UNSTANDARDIZED TYPESETTING

Being a volunteer-run organization, OJED got most of the typesetting done by the authors using MS word templates. This posed a significant challenge, as authors, even after spending a lot of time in formatting, would submit unstandardized articles. The quality of typesetting would vary a lot.

The production team spent 2-4 weeks on editing and formatting in MS word before publishing an issue – but the quality of output still lacked consistency and professional typesetting.



CHALLENGES

RICHER INDEXING IN SCHOLARLY INDEX ENGINES

The production editors at OJED were aware of the benefits for XML-first Typesetting and Academic SEO (Search Engine Optimization) and wanted to incorporate that in their publishing process.

However, most of the web publishing systems use Dublin Core schema to tag article metadata. Dublin Core is highly incompatible with Google and Google Scholar as they prefer Highwire Press and Schema.org as tagging standards.

Thus, preparing an article for richer indexing in Google and Google Scholar posed significant technical hurdles for OJED and manually coding article metadata in JATS XML is a tedious and costly process.

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We came across manuscript editing services and XML typesetting services but they were either too expensive or too complicated or both. One vendor quoted us \$10,000 per year for XML Typesetting!

Dr. Glass said, explaining their efforts to address this challenge.

Typeset is a platform for journal publishers to automate Typesetting and increase journal visibility. Using a software built exclusively for editing scholarly articles, Typeset can automatically convert and enhance author submissions to make them ready for production.

SOLUTIONS

STANDARDIZED TEMPLATE CREATION

OJED was looking to build a standardized design for their journal articles. The publishing team at Typeset, with their 25 years of experience, created a customized template most suited for their requirements.

The templates for OJED journals were made available to be used by the editorial team at OJED and their authors with Typeset's editing software.

Peer-Reviewed Article

Journal of Interdisciplinary Studies

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OPEN JOURNAL IN EDUCATION

Proteomics and bioinformatic analysis of mammalian SWI/SNF complexes identifies external roles in human malignancy

Subunits of mammalian SWI/SNF (mSWI/SNF or BAF) complexes have recently been implicated as tumor suppressors in human malignancies. To understand the full extent of their involvement, we conducted a proteomic analysis of endogenous mSWI/SNF complexes, which identified several new dedicated, stable subunits not found in yeast SWI/SNF complexes, including BCL7A, BCL7B and BCL7C, BCL11A and BCL11B, BRD9 and SS18. Incorporating these new members, we determined mSWI/SNF subunit mutation frequency in exome and whole-genome sequencing studies of primary human tumors. Notably, mSWI/SNF subunits are mutated in 19.6% of all human tumors reported in 44 studies. Our analysis suggests that specific subunits protect against cancer in specific tissues. In addition, mutations affecting more than one subunit, defined here as compound heterozygosity, are prevalent in certain cancers. Our studies demonstrate that mSWI/SNF is the most frequently mutated chromatin-regulatory complex (CRC) in human cancer, exhibiting a broad mutation pattern, similar to that of TP53. Thus, proper functioning of polymorphic BAF complexes may constitute a major mechanism of tumor suppression.

Keywords: Primate, *Macaca mulatta*, Hydrogel, Vas deferens, Styrene maleic acid polymer, Fertility, Vasectomy, Vasalgel, Contraception, Sterilization, Colony management. Options for non-permanent male contraceptives are limited to condoms, with no long-term methods currently available. While vasectomy is very effective as a permanent contraceptive, it is technically challenging to reverse, with low rates of fertility following vasectomy reversal surgery. Lohiya (2001)

However, there have been recent advances in developing potentially reversible contraceptive methods that target the vas deferens. RISUG® (Reversible Inhibition of Sperm Under Guidance) is a styrene maleic anhydride (SMA) product for intra-vas injection that lines the vas, but does not occlude it. The presence of RISUG in the vas is said to create a pH level that generates a positive charge that in turn disrupts

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the acrosomal membrane and prevents normal sperm transport through the female reproductive tract. That product has been studied in nonhuman primates and found to be an effective contraceptive that could be removed from primates with percussive and vibratory massage, returning fertility. While various formulations of RISUG have been studied in India over several decades, no product has successfully been brought to market as of yet. Herrel et al. (2015a) Misro (1979a)

Another intra-vas injection product, Vasalgel™ is a high molecular weight polymer being developed in the US as a contraceptive device for men. Vasalgel is an SMA acid polymer dissolved in DMSO (dimethyl sulfoxide), formulated to adhere to strict regulatory standards. Unlike RISUG, Vasalgel does not claim any pharmaceutical effect and is understood to work by occluding the vasa deferentia. After injection into the vas deferens, the SMA acid forms a hydrogel that appears to be tissue adherent, fills the lumen and acts as a mechanical barrier to the passage of sperm. Vasalgel has proven to produce reliable, durable azoospermia in rabbits in which semen parameters were followed for 12 months after treatment. Vasalgel was subsequently flushed from the vasa deferentia of these rabbits, successfully restoring sperm flow. Lohiya (2005)

The purpose of the current study is to further test Vasalgel in a nonhuman primate model in a setting that is closer to a free-living environment, which includes access to intact, breeding females with a successful reproductive history. This study evaluates the effectiveness of Vasalgel in adult male rhesus monkeys living in small group housing for at least one breeding season and up to 2 years.

Vasalgel test group Sixteen adult male rhesus monkeys (*Macaca mulatta*) were housed at the California National Primate Research Center (CNPRC) in large outdoor enclosures in groups of approximately 10 to 30 animals that included infants, juveniles, and adults. Ten of the 16 males had previous conceptions (Table 1). Males on this study were of varying social ranks with approximately equal numbers of very high ranking and low ranking animals. These housing units, referred to as "corn cribs", are open air, dual-room gazebo-style housing, approx. 700 sq. ft. and include perches, play structures, chew toys and other enrichment devices. The adult population of each enclosure is typically one to three sexually mature males and two to nine sexually mature, intact females. Rhesus males and females reach sexual maturity at 3 to 4 years of age. The CNPRC is accredited by the Association for the Assessment and Accreditation of Laboratory Animal Care (AAALAC), associated with the University of California – Davis and is one of eight National Primate Research Centers maintained and funded by the National Institutes of Health. At the time of study enrollment, animals were assigned to the CNPRC outdoor breeding colony. All experimental procedures were approved in advance by the University of California, Davis Institutional Animal Care and Use Committee (IACUC). Animals were fed commercial monkey diet and water *ad libitum* plus daily foraging mix and weekly produce. Males enrolled were sexually mature, and ranged in age from 4 to 16 years (mean 7.08 ± 3.0 years) and weighed from 7 to 20 kg (mean 11.37 ± 3.20 kg). Males were intermittently housed indoors for procedure recovery and occasional treatment for routine health issues, but those periods were typically brief (1 to 2 days) and none exceed 20 days per episode. Indoor housing conditions were maintained at 37 °C with a 12:12 h light:dark cycle and provided with *ad libitum* monkey chow and water.

Proteomics and bioinformatic analysis of mammalian SWI/SNF complexes identifies external roles in human malignancy 3

Age-matched vasectomy group Only for the purpose of comparing the rate of post-procedure complications, 16 age-matched, previously vasectomized males were computer-selected from over 120 vasectomized males in the CNPRC colony. These males were randomly selected based on matching their age at vasectomy to the ages of the Vasalgel group males (mean 7.1 ± 3.0 years). No other comparisons were made. These males were not co-housed with the Vasalgel males.

Test article Vasalgel consisted of 25% solution by weight of styrene maleic acid (SMA) in DMSO. The average molecular weight (Mw) of the SMA anhydride (Poly(styrene-co-Maleic Anhydride, CAS Registry Number: 25736-61-2) was 377 kDa according to standardized gel permeation chromatography (GPC) methodology (Scientific Polymer, Ontario, NY). The final test article was prepared and packaged in a nitrogen atmosphere in 2 ml glass vials by Polysciences, Inc. (Warrington, PA, USA).

Implantation of test article Animals were sedated with ketamine (10 mg/kg IM, Ketamine hydrochloride, Bioniche Pharma, Rosemont, IL) and atropine (0.05 mg/kg IM, Baxter HealthCare Corp., Deerfield, IL), weighed, intubated and then maintained on isoflurane (0.5-2.0%) for the duration of the surgery. After preparation of the surgical site, an approximate 2-3 cm incision was made just caudal to the right and left inguinal rings to expose the spermatic cords. The tunic was incised (~2 cm) and the vas deferens was isolated. The external diameter of vas deferens in the rhesus monkey is approximately 2.0 mm, only slightly smaller than human. The vasa deferentia were carefully elevated using stay suture and blunt instrumentation to stabilize the vas during injection. Once sufficiently isolated, the vas deferens was injected with approximately 100 µl of Vasalgel over about 30-45 s using a 24 gauge 3/4 inch catheter (Surflo, Tenno Medical Corporation, Somerset, NJ) inserted in a cranial direction. A heparin lock syringe was required to maintain connection with the catheter as significant pressure was required to move the viscous Vasalgel through the catheter and into the vas deferens. After Vasalgel placement, the catheter was removed, and the vas deferens was carefully observed for about 30 s to assess for any leakage of Vasalgel. This volume of Vasalgel filled approximately 2 cm of the length of the vas deferens. The vas deferens was returned to the spermatic cord and the site was closed with 3-0 Vicryl (Ethicon Inc., Somerville, NJ) in a simple continuous pattern. Animals received buprenorphine hydrochloride (0.03 mg/kg IM, Buprenex Reckitt Benckiser Pharmaceuticals Inc., Richmond, VA) twice a day for 1 day and ketoprofen (5 mg/kg IM, Ketofen, Fort Dodge, Fort Dodge, IA) once a day for 3 days for post-operative analgesia. Animals also received cefazolin (25 mg/kg IM, ANCEF® GlaxoSmithKline, Research Triangle Park, NC) twice a day for 3 days. All surgical procedures were performed by the same surgical team and animal recovery was uneventful. Animals were monitored post-operatively daily for 7 days and then returned to group housing. Standard veterinary care was provided throughout the study.

Fertility assessment Animals in corn crib housing units are sedated at least twice per year for routine health monitoring, preventive veterinary care and for pregnancy assessment via palpation or ultrasound. Paternity of all offspring is determined via blood samples collected from offspring at approximately 4 to 6 months of age and submitted for genetic testing to the Veterinary Genetics Laboratory, School of Veterinary Medicine, University of California, Davis. The expected pregnancy rate for sexually mature females

SOLUTIONS

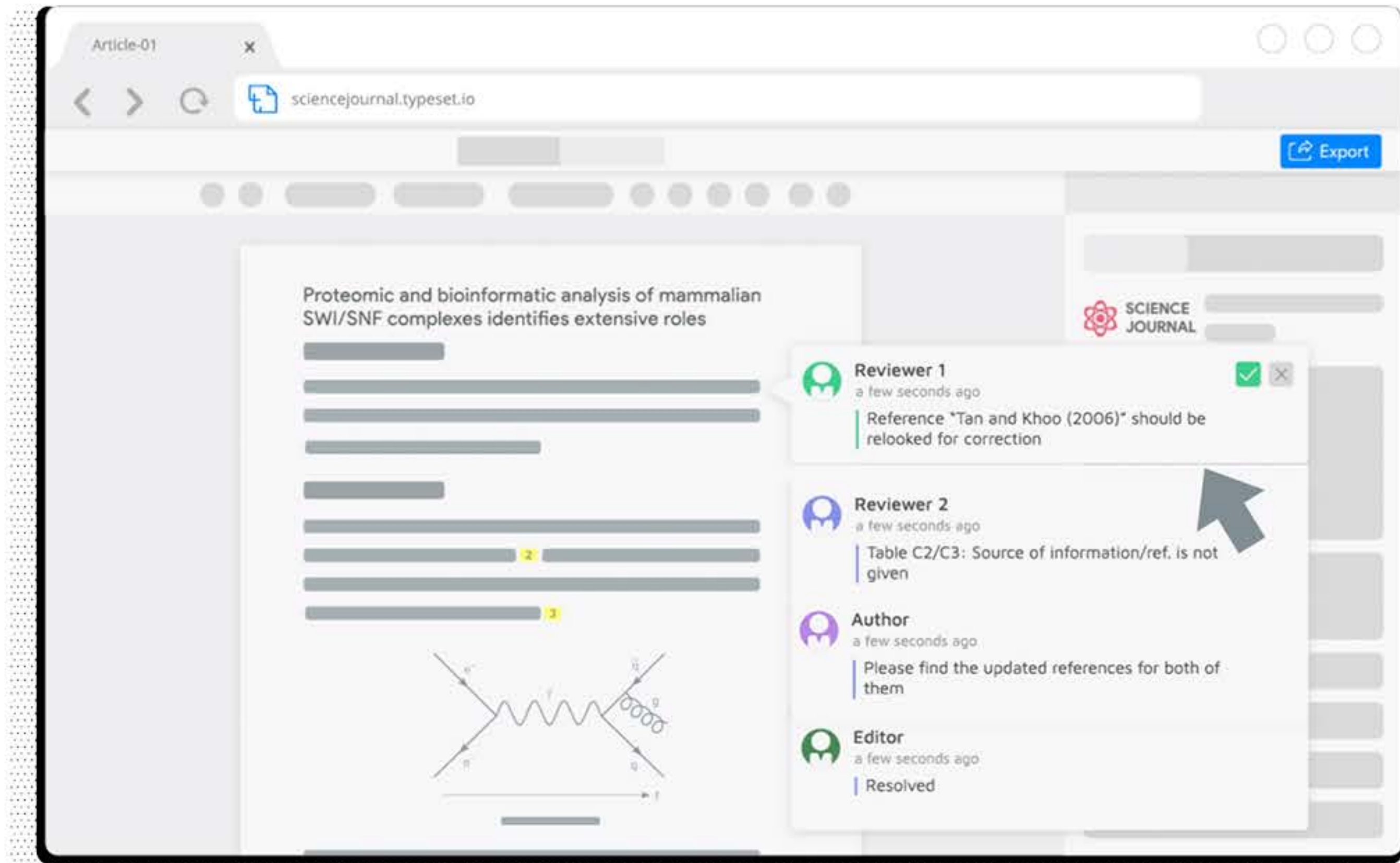
A 10X FASTER WORKFLOW

Typeset's editing software imports manuscripts written in MS Word and provides a simple user interface to edit and enhance articles.

The software has capabilities to:

- Auto-fill and tag references
- Manage complex tables, equations, figures, footnotes etc.
- Self-order citations and references
- Suggest and track changes on articles online
- Check spelling and grammatical mistakes
- Check for plagiarism

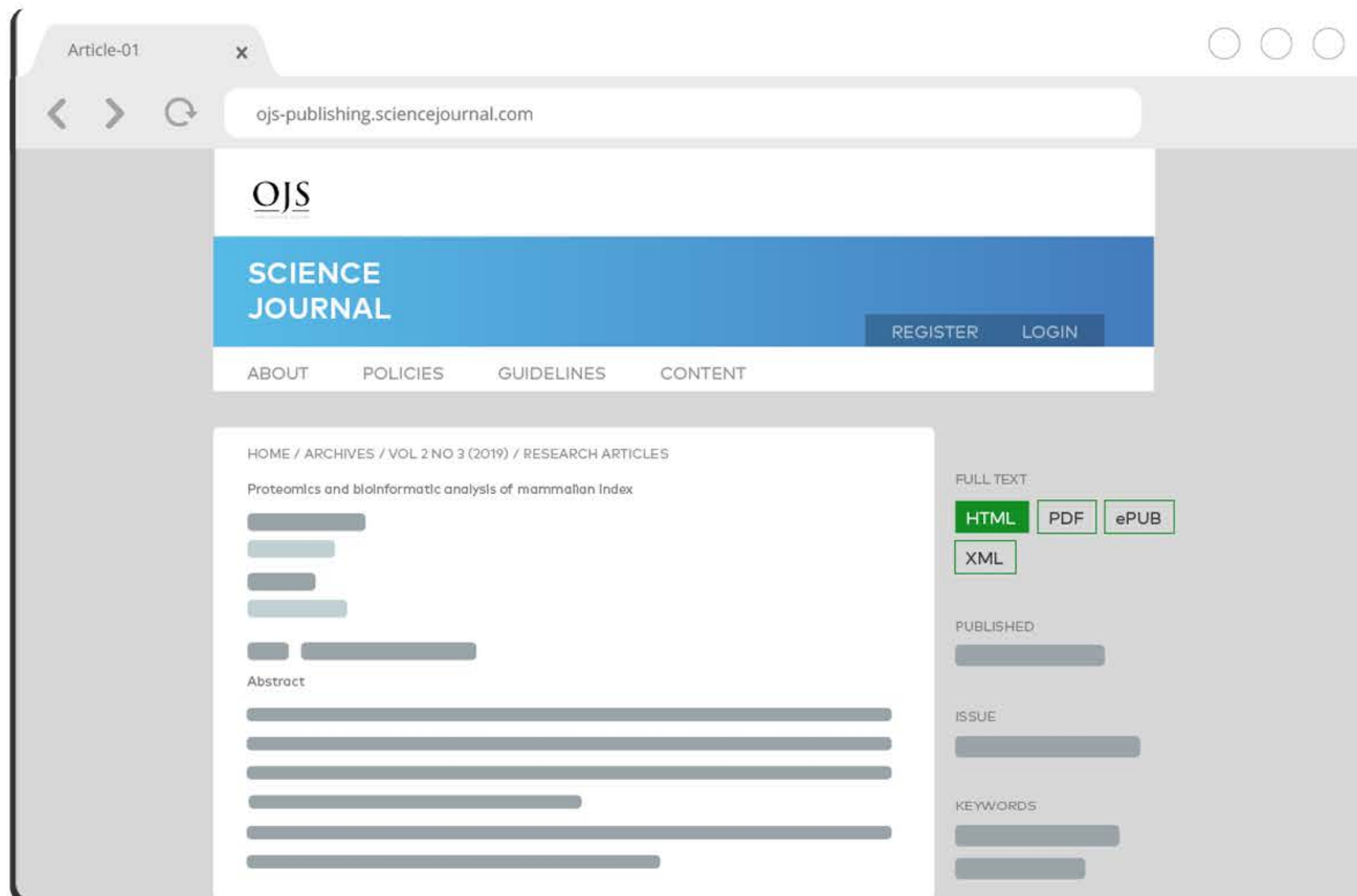
The editorial team and the authors could now collaboratively make super fast revisions to the articles instead of doing it in MS Word files and email threads.



ACADEMIC SEO FOR INCREASED VISIBILITY

OJED uses Open Journal Systems(OJS) as a submission, peer-review system and content management system. The editorial team used Typeset to export articles as OJS Galleys which contain publication ready PDF files. These Galleys are uploaded to directly publish articles via OJS.

The OJS Galleys also contained article JATS XML with proper tagging of metadata such as authors, sections, references, figures, journal details, issue details for proper indexation in Google and Google Scholar.



THE JATS XML ADVANTAGE

Once converted to JATS XML and tagged, articles become indexable by search engines, which means they can now show up in online searches. With this newfound online visibility, the journal's readership and, consequently, its reputation and revenues go up.

An additional side benefit to JATS XML is the ability to host manuscripts as a web page on OJS. There are a several plugins in OJS's plugin gallery that can convert Typeset generated JATS XML to HTML in one click, giving your journal's articles their own home on the www.

RESULTS

95% REDUCTION IN TYPESETTING EFFORT

“Earlier, it used to take hours to make an article production ready depending on the complexity of the article. Now, we can prepare them in around 15–20 minutes”, says Dr. Glass.

OJED no longer needed to work with a large production team – a single associate editor could handle Typesetting and production with Typeset’s software. Typeset’s integration with OJS helped make the overall process seamless.

Earlier, the collaboration between the editorial staff and authors would take weeks when done on email threads. With Typeset’s inbuilt online article collaboration and change tracking, post-acceptance article changes were done more efficiently.

XML-FIRST WORKFLOW AND INCREASED VISIBILITY

Along with fully Typeset PDFs, article JATS XMLs were made a central part of the production workflow. JATS XML and structured tagging of article metadata endured improved rankings of articles in academic search engines like Google Scholar.

THE TYPESET WORKFLOW





OJED has seen significant improvements in our journal production process with Typeset. We have completely automated our journal production and are improving our journal visibility with Academic SEO.

With Typeset, I can handle formatting for all journals with just one grad student instead of a team of copy-editors. And the best part is, that all collaboration happens online on the article instead of emails.

The software is really easy to pick up and the publishing support team has been very helpful in creating templates.

If you want to run a journal efficiently, I would definitely recommend Typeset.

– Dr. Christopher Glass, Senior Editor, OJED



**Supercharge your journal's growth
with Typeset, just like OJED did!**

Schedule a demo today!