INNOVATING THE AUTHORSHIP EXPERIENCE

OVERCOMING **CHALLENGES** ON THE PATH TO **PUBLICATION SUCCESS**

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edanz

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EXECUTIVE SUMMARY

Our experiences across the globe indicate there is dissatisfaction with the current publishing environment from authors in all disciplines. We examine the difficulties ESL (English as a second language) authors face when trying to publish their results in peer-reviewed journals. Our findings are largely based on data from surveys conducted on DXY and ScienceNet.cn, the two leading portals for China's research community. The survey results confirm there are major barriers for ESL authors, supporting our insights from 18 years of first-hand experience working with these communities.

In addition to the difficulties of expressing themselves in English, ESL authors indicate they struggle with many other aspects of the publication process. These include:

- **Selecting an appropriate target journal for their manuscript**
- **Understanding journal guidelines and instructions for authors**
- **Interpreting decisions and comments from editors and referees**
- **The high initial rejection rates of papers written by ESL authors**

The rejection of ESL authors for reasons unrelated to the quality of their research means journals and publishers lose the opportunity to publish important findings. It is also likely the quality of those papers that are published would be improved if both editor and referee comments were better understood. These factors combined result in ESL authors forming negative perceptions of publishers and journals. Savvy publishers have an opportunity to rethink how applying author-centric innovations can better serve their primary resource—authors.

We outline a number of solutions for publishers to improve relationships with ESL authors, including:

- **Translated and simplified instructions for authors**
- **Improved aims and scopes**
- **Journal selection tools**
- **Improved peer review practices**
- **Clear, definitive statements in decision letters from journal editors**
- **Increased use of graphical elements in writing guidance**
- **A sample 'Exemplary Article'**
- **Better overall communication strategies**

Considerations on the path to publication success

WRITING AND EDITING

- Citation management
- Writing an outline
- Formatting guidelines
- Writing in English

PUBLICATION ETHICS

- Plagiarism
- Data fabrication
- Submission to multiple journals

JOURNAL SELECTION

- Assessing relevance to a research topic
- Determining likelihood of acceptance
- Comparing journals

SUBMISSION AND REVIEW

- Navigating a submission system in a second language
- Decision to resubmit or try a different journal

PUBLICATION TIMEFRAME

- Peer review and publishing takes a long time

THE ROLE OF ESL AUTHORS IN TODAY'S PUBLISHING LANDSCAPE

The number of manuscripts from ESL authors submitted to peer-reviewed journals continues to increase. According to SCImago Journal & Country Rank (SJR), seven of the countries ranked in the top 10 with respect to output of citable documents in 2012 (Fig. 1) do not have English as their main language.[1] Correlating with the increase in manuscript numbers from ESL authors, the number of global researchers is growing steadily at about 4–5% per year.[2]

According to 2011 data, most of this growth is accounted for by Asian countries, which is in sharp contrast with the small growth seen in the European Union (Table 1).[2–4] Over a 10-year period (2002–2011), South Korea, Taiwan, Singapore, and China have all experienced noticeable increases in numbers of researchers (Table 1).[3] In 2009, almost 40% of all researchers worldwide were located in Asia; China accounted for 16.5% of the global total, followed by Japan with 9.4%.[4]

The BRIC (Brazil, Russia, India, and China) nations in particular cannot be ignored given the substantial numbers of articles being produced (Fig. 2).[1] As of 2012, the world share of peer-reviewed journal articles produced from these countries was 22%.[1] A second tier of emerging nations, the MINT (Mexico, Indonesia, Nigeria and Turkey) bloc, could soon have a significant impact on the journal publishing landscape, with latest figures showing they accounted for 2.1% of articles globally in 2012.[1]

The increased volume of submissions from non-traditional markets has in many ways been a blessing for publishers. However, it is also a source of new problems and frustrations. These problems are because the current publication frameworks are more suited to authors with a strong understanding of English and experience in scholarly publishing. There is the need for a paradigm shift by major stakeholders, in particular publishers, to adapt to the specific needs of those ESL authors new to scholarly communication. The problems caused by increased submission volumes from these authors need to be resolved quickly and practically. This will ensure a more level playing field for ESL researchers presenting their findings to the international community.

Through the use of surveys and from our first-hand experiences, we identified a number of barriers to publication for ESL authors.[5] Broadly speaking, these barriers are encountered during the preparation of a manuscript, and when authors must interact with editors and referees during peer review.

Table 1. **Global growth of researcher numbers**[2–4]

	% WORLD RESEARCHERS 2009	% 2011 GROWTH	% 10-YEAR GROWTH (2002–2011)
CHINA	16.5	8.9	63
JAPAN	9.4	0.1	5
SINGAPORE	0.5	5.3	83
SOUTH KOREA	3.4	9.4	104
TAIWAN	1.7	4.9	92
USA	20.5	4.6	20
EUROPEAN UNION	21.8	1.4	34

Figure 1. **Output of citable documents**[1]
The top ten countries for 2012.

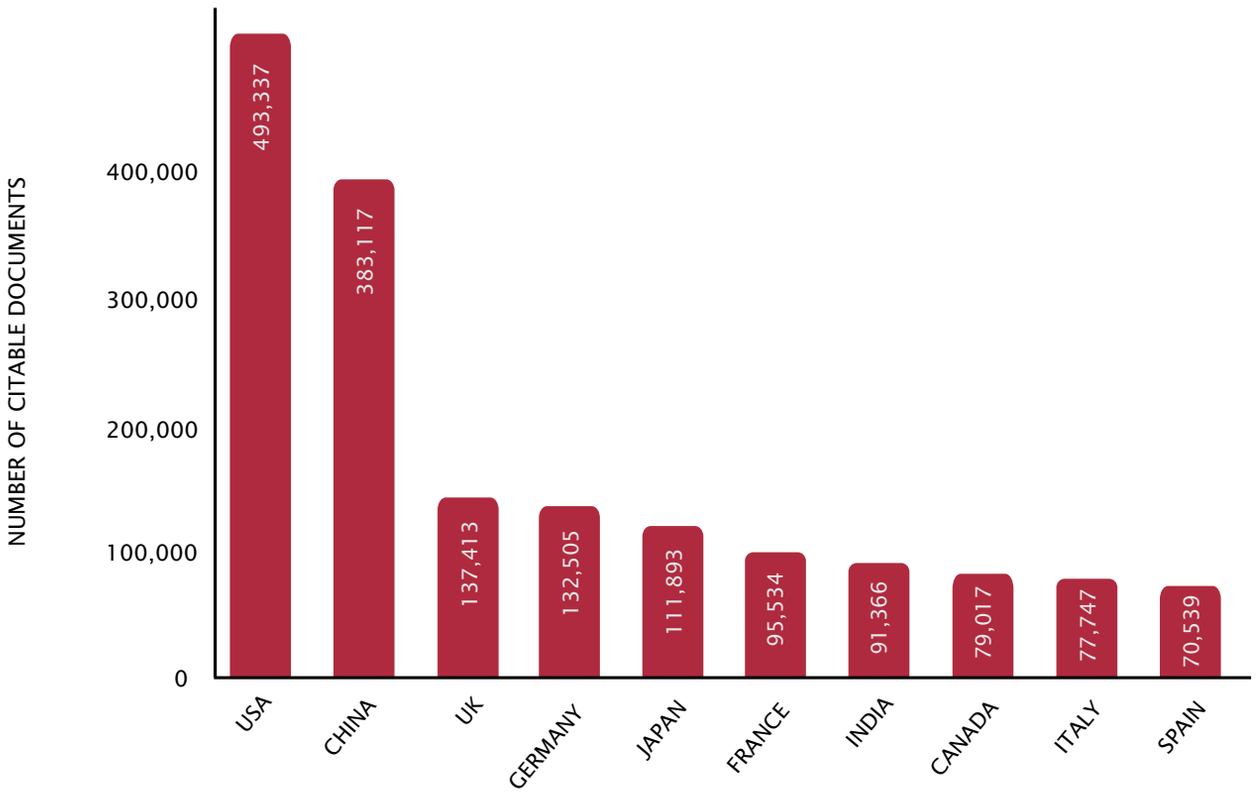
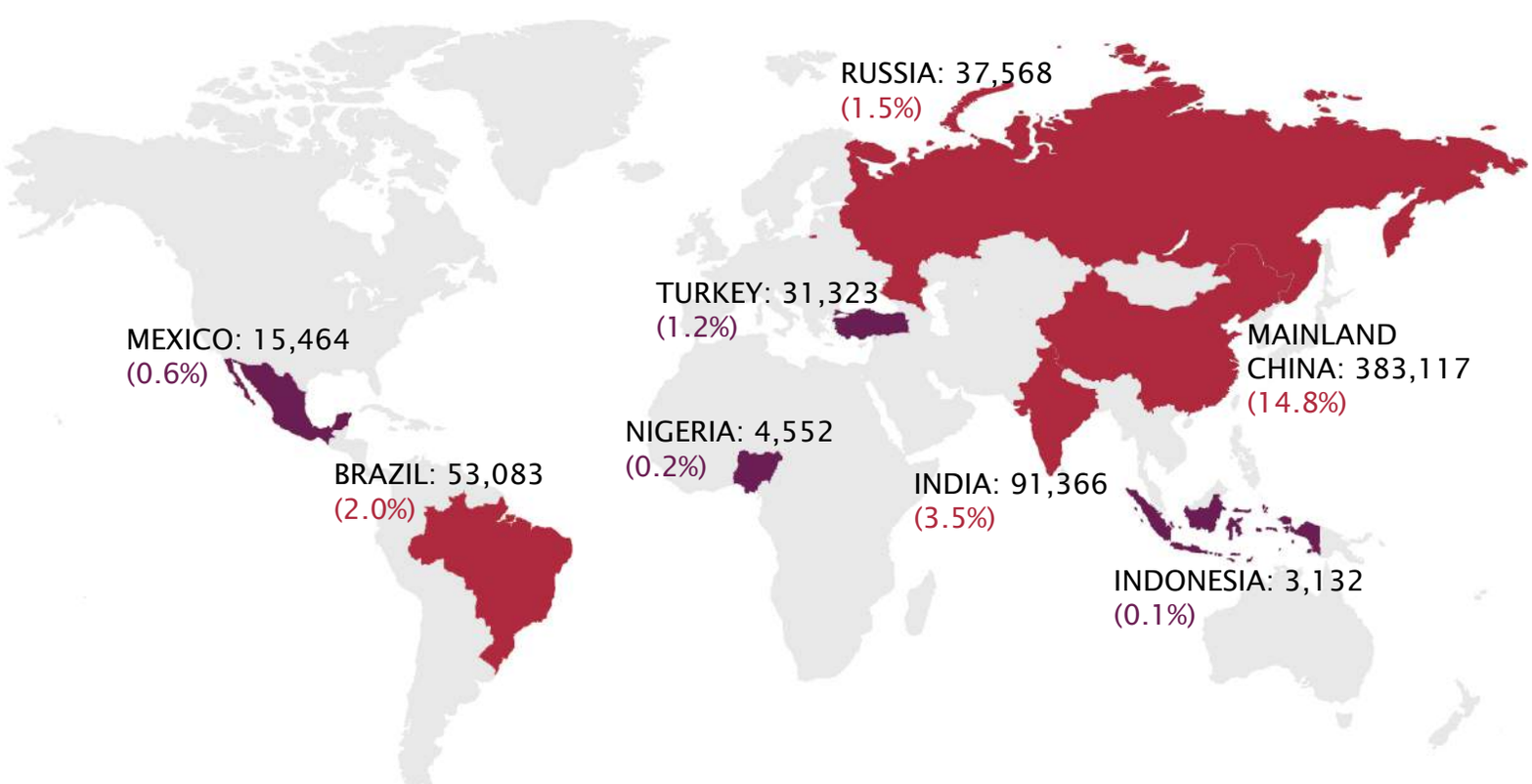


Figure 2. **Journal article output and share**[1]
The number of articles produced by the BRIC (Brazil, Russia, India and China) and MINT (Mexico, Indonesia, Nigeria and Turkey) nations for 2012 and their respective shares of the global publication output.



THE ISSUES

All authors face challenges on the path to publication success (Fig. 3). Researchers for whom English is a second language, especially those from 'non-traditional' or 'emerging' markets, face even greater difficulties. Language is an obvious issue; some ESL authors can struggle to express themselves succinctly in English. They might also be unfamiliar with the publication process and lack experience in addressing referee comments during peer review.

All authors face challenges on the path to publication success.

From speaking with publishers and journal editors, and through our first-hand experiences with ESL authors around the world, we know that manuscripts from many of these authors:

- **Are submitted to inappropriate journals**
- **Have language issues**
- **Do not conform to journal guidelines**
- **Do not adhere to recognized guidelines for publication ethics**

Figure 3. **Barriers to publication success**
There are numerous challenges encountered by authors attempting to publish in peer-reviewed journals.

- When should I choose a journal?
- How should I choose a journal?
- Would an open access journal be suitable?

- How do I develop an effective outline?
- The formatting requirements are confusing.
- Writing in English is difficult for me.

- Using the submission system is not intuitive.
- It is unclear exactly what information must be provided before I start the submission process.

- What does this comment mean?
- Should I submit to a different journal?
- Was I rejected?

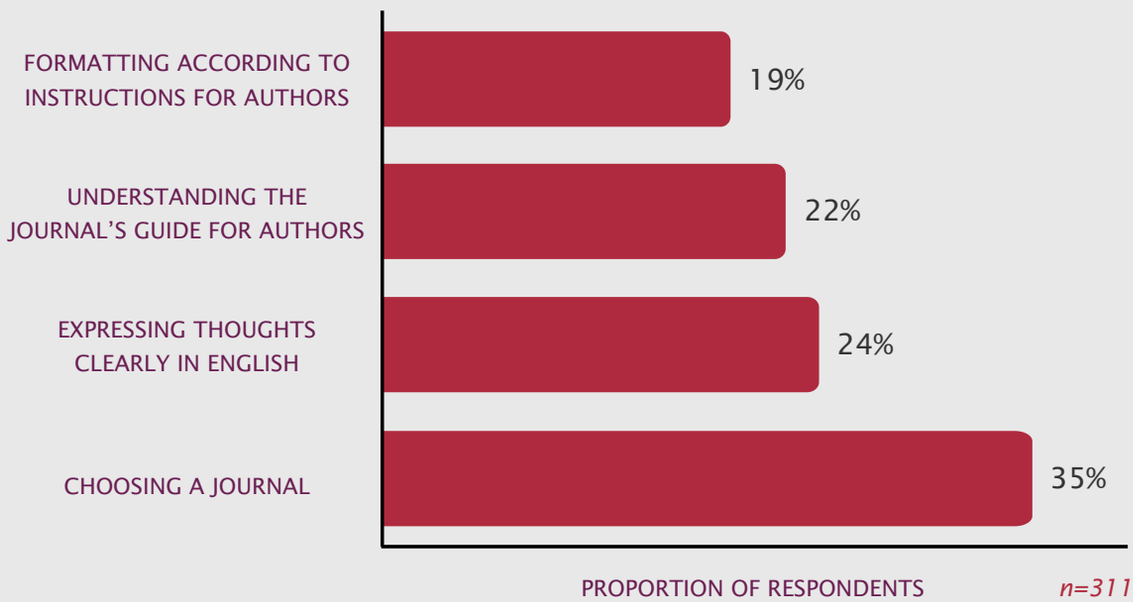
LANGUAGE DIFFICULTIES

Difficulties with language hinder ESL authors from successfully navigating the publication process. While ESL authors tend to focus on grammar, the successful written communication of ideas is also dependent upon other factors. Typically, when writing a scholarly article in English, the aim is to first capture the attention of the reader, next to discuss the broader relevance of the work, then to logically create an argument for the findings using supporting information. This broad-to-specific approach extends to every level of discourse in an article, from paragraph down to sentence level. However, writing styles across cultures differ markedly and ESL authors often struggle to use a style common to authors whose first language is English.[6] Thus, difficulty in expressing explicit unequivocal conclusions and logically, cohesively and concisely developing an argument are major language hurdles faced by ESL authors.[6]

Language issues extend beyond the writing and revision stages, with almost 22% of respondents telling us they struggle to understand journal submission guidelines.

In conjunction with ScienceNet.cn,[7] we surveyed 311 Chinese researchers across multiple fields and disciplines, and at varying levels of research and publication experience. Based on the responses received, we found that language difficulties arise at several stages during manuscript preparation (Fig. 4) and peer review. It is also clear that language issues extend beyond the writing and revision stages, with almost 22% of respondents reporting they struggle to understand journal submission guidelines.

Figure 4. **Manuscript preparation difficulties**
Factors identified as the 'most difficult aspect of manuscript preparation' by authors preparing manuscripts for peer-reviewed journals.



SPEED TO PUBLICATION

The time and effort spent by authors, editors and referees in preparing manuscripts for publication is significant (Fig. 5). According to a report by King and Tenopir, "...authors and co-authors together average spending 95 hours per article..." during its preparation.[8] These findings were specific to researchers based in the USA that were fluent in and conducting their work in English. With respect to peer review, Ware and Monkman found that "the average elapsed time to complete a review was roughly 24 days. The average (mean) amount of time spent on a review was 8.5 hours (median 5 hours)" per referee.[9] Assuming at least two referees are used per manuscript, the average time spent on a manuscript up to this point is 112 hours without even factoring in the time spent by a journal editor assessing the manuscript. Ware and Monkman also pointed out that non-Anglophone referees took more than twice as long to conduct their review.[9]

Based on these published findings, and combined with our first-hand experiences, we postulated that language issues result in ESL authors taking *at least* twice as long to prepare their manuscripts for submission to a journal. We conducted a survey, with help from DXY,[10] involving 663 Chinese researchers. Seventy-eight percent of participants told us they spend more than 100 hours preparing their manuscript for submission. Surprisingly, 43% of respondents indicated they actually take much longer—*more than 200 hours*—to select a journal, write and edit the manuscript, prepare figures and tables and navigate a submission system.

The elapsed or 'real' time it takes to get a submitted manuscript accepted by a scholarly journal is months, sometimes years. This depends on the field of research, the number of rounds of peer review, and the journal's publication timetable. Time to publication is an often-cited frustration of academic authors, especially in fast-moving fields where speed to publication is a crucial factor. While attention to detail is obviously necessary when assessing manuscripts that will be added to the literature, it can be argued that the time taken to complete the process slows down knowledge advances, and detracts from the research process itself. Given the extra time it can take ESL authors to prepare a manuscript, it is important to address barriers in the scholarly publication process.

...language issues result in ESL authors taking at least *twice as long to prepare their manuscripts for submission to a journal.*

TARGETING A JOURNAL

Approximately 35% of respondents in the ScienceNet.cn survey listed "Choosing a journal" as the most difficult aspect of manuscript preparation (Fig. 4). Like many challenges ESL authors face, the inability to choose an appropriate target journal is partially caused by either not reading enough, or by an insufficient understanding of the literature in their field; both are related to language difficulties.

Another confounding factor in some emerging markets is that access to the most up-to-date literature can be problematic. Furthermore, with the large number of publication options available, even well-read and experienced authors can find choosing an appropriate target journal difficult.

Other difficulties in choosing a journal cited by our respondents include:

- **A lack of information regarding turnaround and production times, and acceptance rates**
- **Unclear indexing status of some journals**
- **Assessing the potential impact of one's own results**
- **Determining the suitability of their manuscript for a particular journal**
- **Unclear publication costs**

The difficulty of selecting a journal becomes apparent when one considers the criteria authors use to make a decision. Like their counterparts around the world, Chinese authors write so that their articles can be read by their peers. This can be clearly seen in that 68% of respondents, when asked what their primary consideration was during journal selection, selected criteria that could be grouped loosely as those aimed at reaching a target audience and gaining recognition (Fig. 6).

Chinese researchers are not dissimilar to their Western colleagues; they are busy and often face strict deadlines. This is why criteria representing convenience, such as 'speed to publication,' accounted for 20% of primary journal selection criteria (Fig. 6). We also note that 12% of respondents listed 'publication model' as their primary criteria when considering journals for submission.

In this survey, we did not elicit opinions regarding open access (OA)—only whether it was taken into account as a factor during journal selection. A larger than expected proportion (12%; Fig. 6) of surveyed Chinese authors stated that OA was a criterion factored into their decision-making. Given our experiences speaking with authors, we were surprised that only 17% of respondents in our survey cited a journal's impact factor as being at the forefront of their minds when choosing a journal. Taking into account widespread policies in China requiring publication in journals above a certain impact factor,[11] these results might understate the degree to which some authors take a journal's impact factor into account.[12]

Figure 5. **Comparative manuscript preparation and revision times**

The times stated at the top of the figure indicate the 'active' time spent by non-ESL authors (black)[8] and ESL authors (red) in writing and then revising their manuscripts following peer review. Times at the bottom of the figure (purple) indicate elapsed time for both ESL and non-ESL authors navigating the publication process.

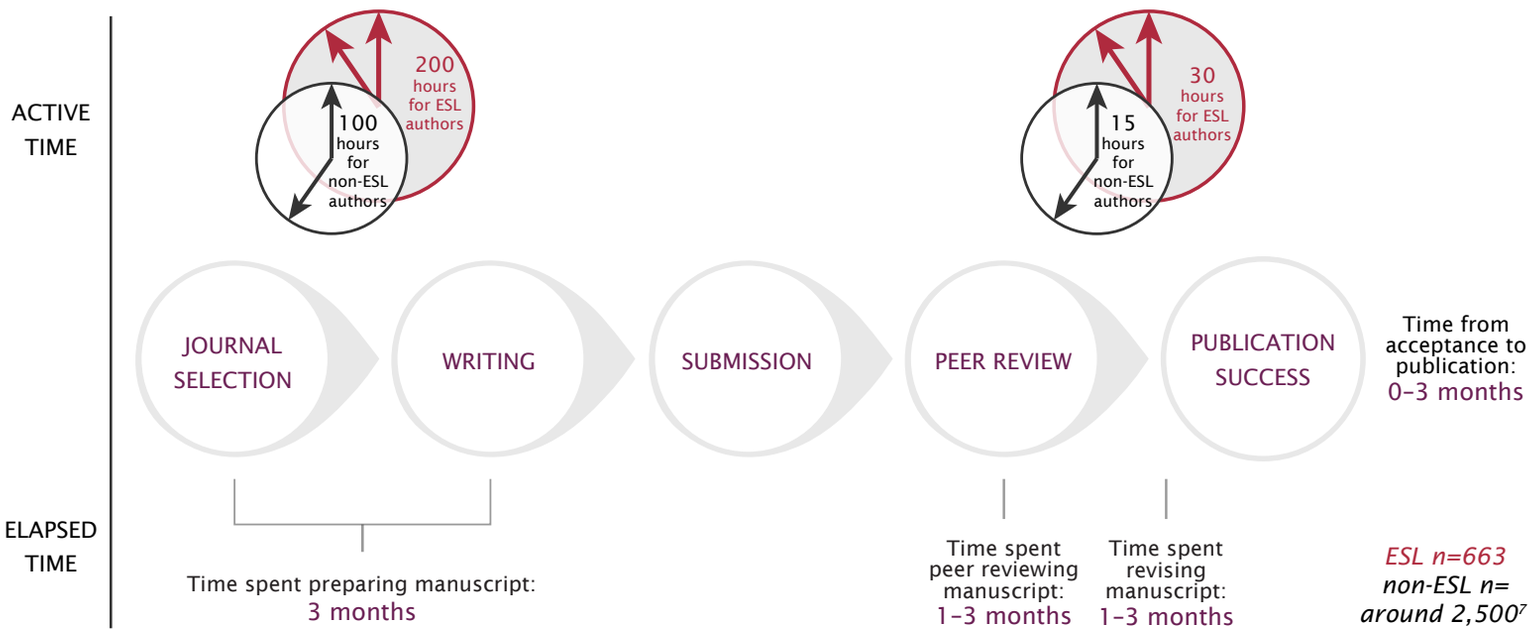
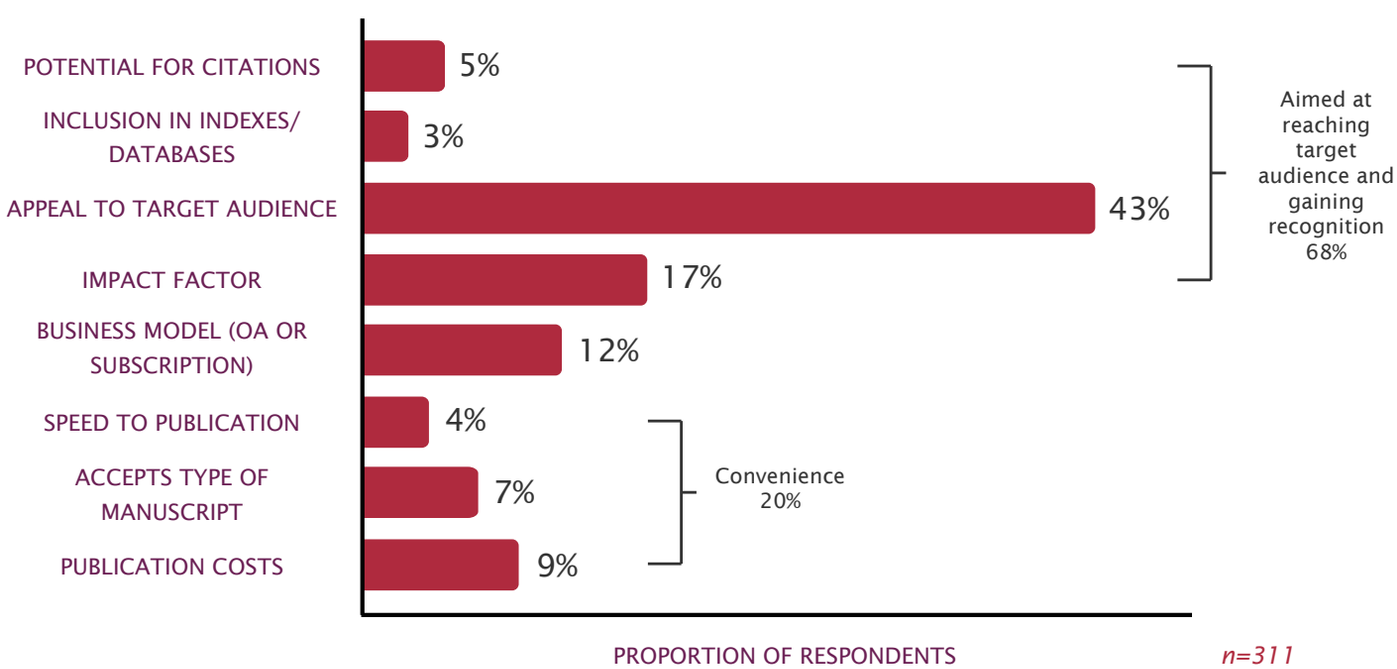


Figure 6. **Primary criteria considered by authors during journal selection**



PEER REVIEW

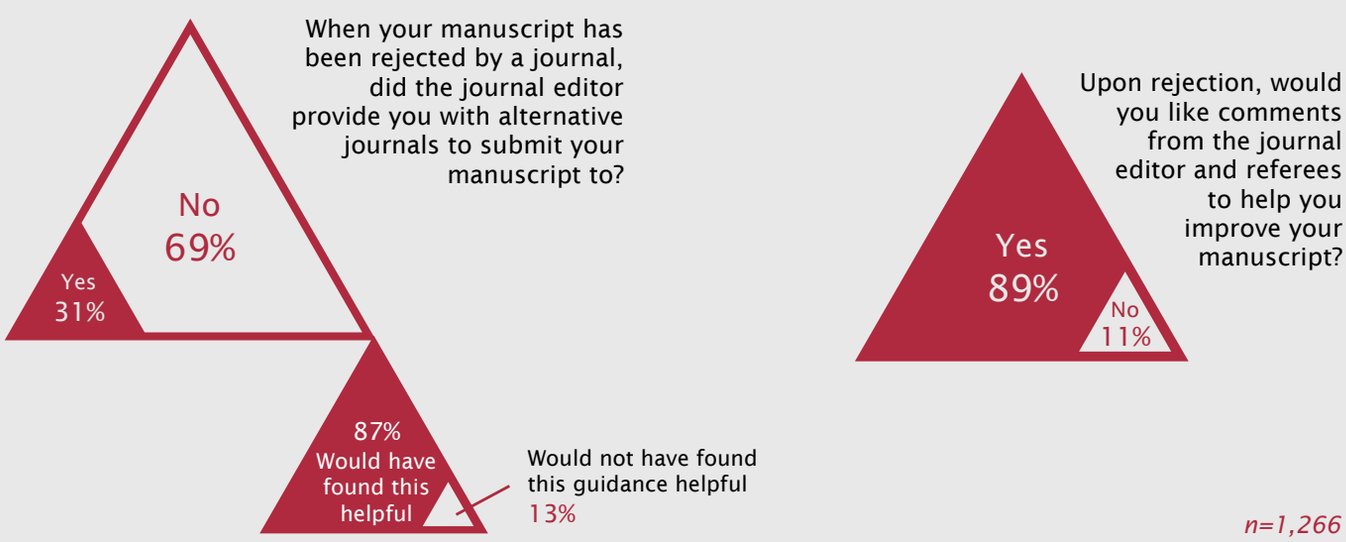
Although steps are being taken to improve the transparency and speed of peer review, we feel that journals are not sufficiently considering the actual process of *how* information is communicated to authors. As a result, the lack of clarity in editor and referee comments and minimal guidance during the publication process are creating even more barriers for ESL authors. Consistency in peer review requirements and standards between publications varies—"one journal's approach to peer review is not the same as another's, despite some comparable systems."[13]

At a challenging time for the industry, peer review is cited by stakeholders as a crucial element of scholarly publishing.[14,15] Publishers therefore need to ensure that peer review meets author expectations. Although the quality of peer review of most publications is considered high in terms of scientific rigor, it does not meet the expectations of many authors with respect to speed, format and ease of understanding. Peer review should be a valued part of the process for authors rather than a frustrating hurdle.

We carried out a second DXY survey, involving 1,266 respondents, examining author experiences and expectations of the peer review process. The authors who participated in this survey already had ideas on how their experience could be improved: *89% would like journals to provide comments* to help them improve their manuscript (Fig. 7). They expect, and want, these comments at any stage of the process where they might be rejected by a journal. Additionally, *87% of authors would appreciate a recommendation* for an alternative, more appropriate journal when receiving a rejection letter (Fig. 7).

In general, Chinese respondents told us they felt they were not provided enough information during peer review to make informed decisions about their submission, or how to proceed after a round of review. These results show clear dissatisfaction among ESL authors with present peer review practices. Respondents want journals to provide better information about peer review, and its associated decision-making process. Information such as typical times from submission to publication, clear and specific instructions on how to address referee comments, and the expectations of journal editors in responding to comments was requested.

Figure 7. **Providing editorial assistance**
Authors are requesting guidance and advice from journal editors following submission of a manuscript.

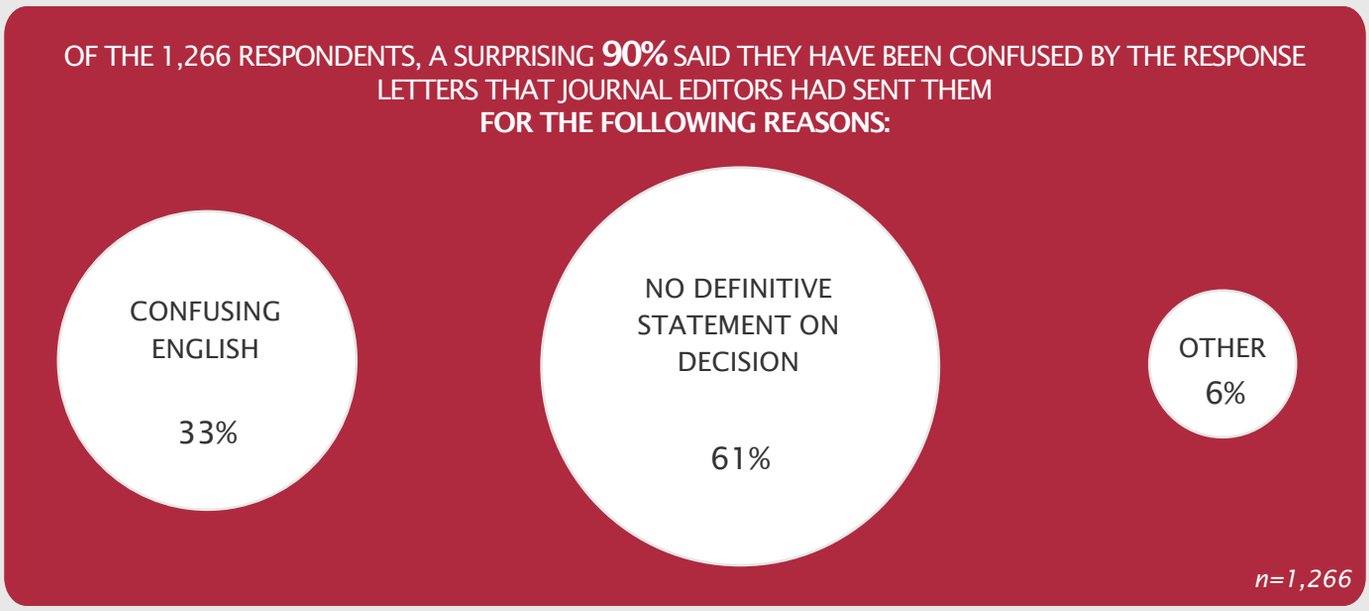


JOURNAL EDITORS

The response letter sent by the journal to authors after they submit is meant to convey an editor's decision, and possibly referee's comments to the authors. However, these letters are often confusing and lacking in clear directions. As noted above, ESL authors can struggle to understand what is required of them after a manuscript has been through a round of peer review. Of the 1,266 respondents, a surprising 90% said they have been confused by the response letters that journal editors had sent them (Fig. 8). Given the growing numbers of authors and articles from China, as we have outlined previously (Fig. 2), this is a potentially massive problem that could stymie publication growth.

We identified that a major cause of this confusion is the lack of a definitive statement by the journal editor regarding the manuscript's status. Editorial decisions and suggestions are often wrapped in subtle language in attempts to be polite or avoid confrontation. Unfortunately, ESL authors find it difficult to interpret these subtleties and are left uncertain about what to do next. Perhaps unsurprisingly, 33% of respondents said the journal editor's English was difficult for them to understand.

Figure 8. **Editorial comments can be confusing**
Many authors told us they are sometimes confused by comments from journal editors. The quote provided is a real-life example of a journal editor comment that an ESL author perceived to be confusing because no definitive statement was given regarding acceptance or rejection of the manuscript.



"Thank you for considering [journal title redacted] for consideration of your work. I do hope that the outcome of this specific submission will not discourage you from the submission of future manuscripts."

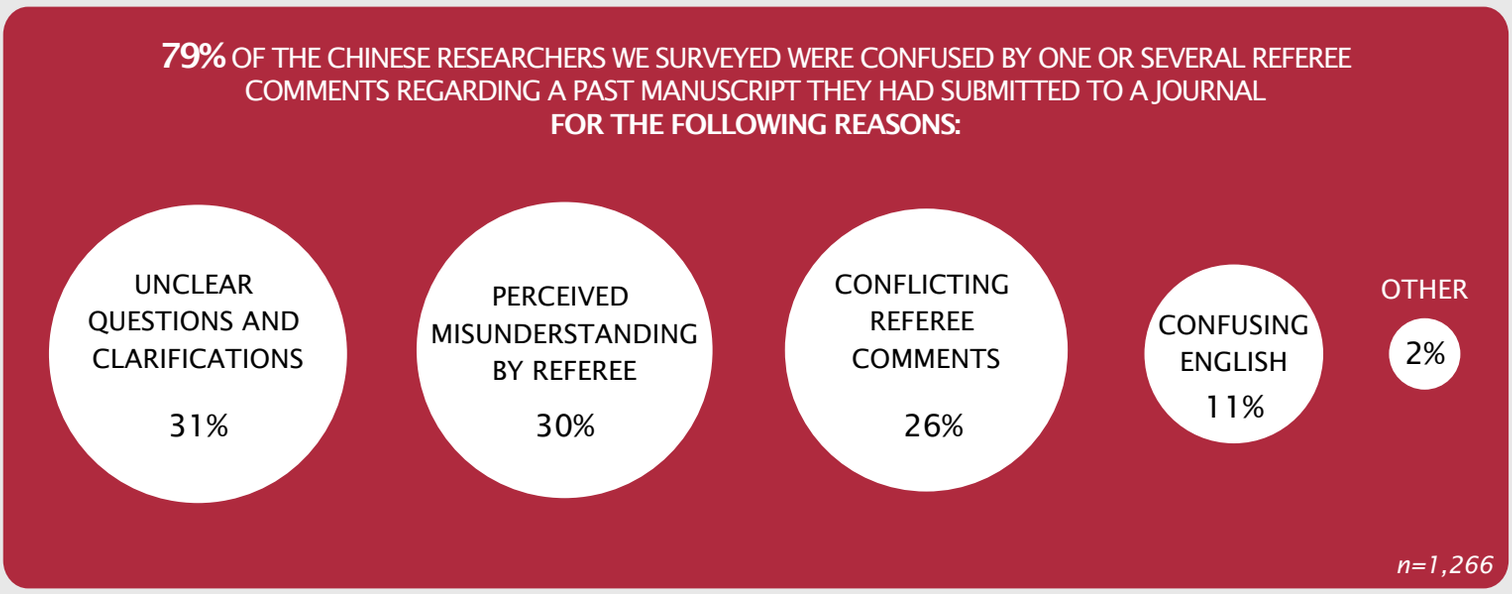
REFEREES

Between rounds of peer review, authors address comments from referees; however, 79% of the Chinese researchers we surveyed were confused by one or several referee comments regarding a past manuscript they had submitted to a journal. The reasons for confusion varied, but again relate to challenging language and conflicting statements from different referees, that ESL authors find difficult to understand (Fig. 9).

While these results might seem surprising to some, they back up our first-hand experiences. Each month at Edanz we receive hundreds of queries from clients in China and Japan related to interpreting and addressing comments from editors and referees. One reason that editors, referees and publishers involved with peer review are possibly unaware of these issues could be that authors are unwilling, or embarrassed, to contact the individuals actively assessing their manuscript to seek clarification. Alternatively, and more likely, is that journals and publishers do not have an effective system in place to handle such issues.

Making it easier for ESL authors to understand comments from journal editors and referees, and what is required of them after each round of review, will result in better, more appropriate responses, possibly with a quicker turnaround. This, in turn, would lead to more rapid publication of higher quality articles, reducing the burden of the review process for all involved.

Figure 9. **Confusing referee comments**
Comments from referees can confuse authors for various reasons. The quote provided is a real-life example of a referee comment that an ESL author perceived to be confusing. No specifics are provided regarding the language problems; therefore, the author does not know how to adequately address the issue.



"Authors should revise the entire Introduction section such that the language used is up to the standard of an international publication."

PROPOSED SOLUTIONS

Publishers and journal editors are dealing with an ever increasing number of submissions from ESL authors in non-traditional markets, in particular China. According to Shaw, "China is a large market with excellent long-term potential, but publishers and journals have often found that dealing with the rapidly growing number of submissions from its authors is problematic."[16] In conjunction with this issue, the unique challenges ESL authors face need to be addressed. Adopting an author-centric approach, re-thinking how to handle submissions from ESL authors, and providing solutions to the particular challenges faced by these authors will unlock the aforementioned values for publishers and journals alike.[16]

"China is a large market with excellent long-term potential, but publishers and journals have often found that dealing with the rapidly growing number of submissions from its authors is problematic."

The solutions proposed in the following section address:

- **Specific guidelines regarding English language requirements**
- **Access to language editing services**
- **The accuracy of aims and scopes for journals**
- **Translated and simplified journal guidelines**
- **Free access to journal selection tools**
- **Clear and precise communications from journals**
- **Improved peer review systems**
- **Increased use of graphical elements for writing guidance**

LANGUAGE TOOLS AND SERVICES

To increase the language quality of submissions, and thus make it quicker and easier to handle increasing volumes of submissions, journals and publishers need to clearly explain the language expectations and editorial style of their journal. This should be done as part of the instructions for authors. A clear and simple statement to use a direct writing style would assist at least 22% (Fig. 4) of authors. Journals should strongly advocate a simple style of writing, whether it is the linear English style described by Cameron or otherwise.[6] It should be clearly explained to authors that the simplicity of this style is intentional, preferred, and contributes to, rather than detracts from, understanding complex findings. A simple style also benefits journals and publishers, as ESL readers are more likely to read, and potentially cite, easy-to-understand articles, when complex findings and phenomena are involved.

There has been a shift in scientific writing over recent decades that has seen the use of the first person and active voice favored over the more traditional third person and passive voice. However, the majority of ESL authors and a large proportion of English-speaking researchers are unaware of this evolution in writing style; many are ardent opponents. Indeed, most senior authors of scholarly papers were taught as graduate students that the first person and active voice were anathema in scientific writing, and are passing this down to the current generation. Using the first person point of view and active voice facilitates more effective communication in often dense articles. Some of the greatest proponents of these writing aspects are style guides (Fig. 10), including the ACS Style Guide,[17] AMA Manual of Style,[18] and the Chicago Manual of Style.[19] However, it is unrealistic for publishers and journals to expect ESL authors to read *and* understand these massive tomes of information. Instead, it would make more sense for journals to clearly state, again within the Instructions for Authors, their preference for active/passive voice and first/third person point of view.

Assistance with language can also be achieved through journals recommending the various free resources available on the internet. One very good example of this is the *Academic Phrasebank* from Manchester University.[20] This tool provides writers with lists of commonly used phrases and transitional words found in academic articles. Resources similar to the *Academic Phrasebank* assist authors to create stylistically acceptable, non-plagiarized sentences, and at the same time help develop their own voice.

Journals can also recommend paid-for services that authors can turn to if they require language editing help. Although this is already a widespread practice, it is common for these recommendations to be deeply buried within a journal's website. It would be helpful for ESL authors if links to recommended services were more prominent.

Figure 10. **Style guides are major proponents of simple writing and use of the active voice in scholarly publications**

"Use the active voice when it is less wordy and more direct than the passive"[17]

"In general, authors should use the active voice…"[18]

"As a matter of style, passive voice is typically, but not always, inferior to active voice"[19]

"Use the active voice rather than the passive voice…"[21]

"Nature journals prefer authors to write in the active voice…"[22]

AIMS AND SCOPES OF THE FUTURE

The traditional aims and scope statement provided by journals is outdated, and does not make use of technology or current modes of communication. Journals need to carefully reconsider what information authors want, in particular ESL authors, and what they would find useful. How could the presentation of this information be improved to be more inclusive, engaging, and understandable than the standard complex paragraph structure currently employed by most journals? New models of journal–author communication such as that used by *Cell Reports* (Fig. 11),[23] incorporate informative video interviews with a journal editor. This concept could be developed further into an aims and scope video or animation that is a quick, clear, and personal selling point for a journal.

Updating a journal's aims and scope statement more regularly to reflect the current focus of the journal as it evolves, and clearly stating key information such as editorial decision and production timelines, would also greatly assist the decision-making process for all authors. Some journals such as Nature's *Scientific Reports* (Fig. 11)[24] make regularly updated and alternative publication metrics available to potential authors; this is information that authors have long been requesting.

The video introduction by *Cell Reports* could be combined with the author-centric and timely metrics provided by *Scientific Reports* to form a new concept of what the aims and scope can be. The aims and scope of the future will enable authors to make more informed decisions when selecting their target journal.

Figure 11. **Alternative presentation forms for the aims and scopes of academic journals**[22, 23]

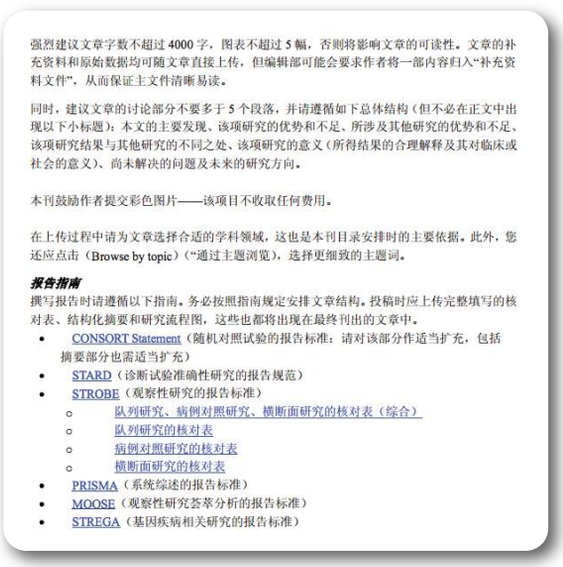
SIMPLIFYING INSTRUCTIONS FOR AUTHORS

Most instructions for authors contain the relevant guidelines for those preparing a manuscript; however, a substantial number are long (greater than 3,000 words) and very dense. The likelihood of authors reading *and* understanding these instructions is low, especially if English is not their first language. While the information presented might be accurate, the way in which it is presented is difficult for almost any author, regardless of their first language, to understand. Consequently, finding key information becomes a time-consuming chore on top of the writing process.

From our day-to-day experiences with ESL authors at Edanz, we have also noticed that instructions for authors do not always concur with the format of current issues or sample articles provided. There is a clear need to ensure all instructions for authors are kept current to avoid conflicting information reaching authors, as this inevitably results in confusion. Journals should also consider reducing formatting requirements for submitted manuscripts; at the very least, journals should provide manuscript templates for their potential authors. Templates are becoming more common but remain to be widely implemented.

Another obvious solution is the translation of instructions for authors into key languages. Close to 20% of survey respondents (Fig. 4) told us that formatting requirements were a major area of difficulty during the preparation of their manuscript. In a joint effort with the *British Medical Journal*,[25] Edanz assisted with translation of their instructions for authors into Chinese (Fig. 12). Some Royal Society of Chemistry journals have conducted similar translations in various languages,[26] but this is an initiative that needs to be widely adopted across the industry.

The use of languages other than English during submission is another possibility. Journal management and submission systems such as Open Journal Systems, Editorial Manager, and ScholarOne have multiple language capabilities that do not appear to be broadly used.[27–29] While we appreciate that managing instructions for authors and submission systems across many journals can be difficult even in one language, we predict the use of localized languages will soon become an industry standard. An early and economical approach to this problem could be the simple integration of the Google Translate feature into pages of a journal's website, as Taylor & Francis have done with their published articles.[30] In the long term, journals that adopt a multilingual approach are likely to benefit from an increase in submissions that are better prepared, and hence easier to process.



强烈建议文章字数不超过 4000 字，图表不超过 5 幅，否则将影响文章的可读性。文章的补充资料和原始数据均可随文章直接上传，但编辑部可能会要求作者将一部内容归入"补充资料文件"，从而保证主文件清晰易读。

同时，建议文章的讨论部分不要多于 5 个段落，并请遵循如下总体结构（但不必在正文中出现以下小标题）：本文的主要发现、该项研究的优势和不足、所涉及其他研究的优势和不足、该项研究结果与其他研究的不同之处、该项研究的意义（所得结果的合理解释及其对临床或社会的意义）、尚未解决的问题及未来的研究方向。

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在上传过程中请为文章选择合适的学科领域，这也是本刊目录安排时的主要依据。此外，您还应点击（Browse by topic）("通过主题浏览)，选择更细致的主题词。

报告指南

撰写报告时请遵循以下指南。务必按照指南规定安排文章结构。投稿时应上传完整填写的核对表、结构化摘要和研究流程图，这些也都将出现在最终刊出的文章中。

- CONSORT Statement（随机对照试验的报告标准：请对该部分作适当扩充，包括摘要部分也需适当扩充）
- STARD（诊断试验准确性研究的报告规范）
- STROBE（观察性研究的报告标准）
  - 队列研究、病例对照研究、横断面研究的核对表（综合）
  - 队列研究的核对表
  - 病例对照研究的核对表
  - 横断面研究的核对表
- PRISMA（系统综述的报告标准）
- MOOSE（观察性研究荟萃分析的报告标准）
- STREGA（基因疾病相关研究的报告标准）

Figure 12. **Translation of journal instructions into local languages could assist ESL authors**[25]

JOURNAL SELECTION TOOLS

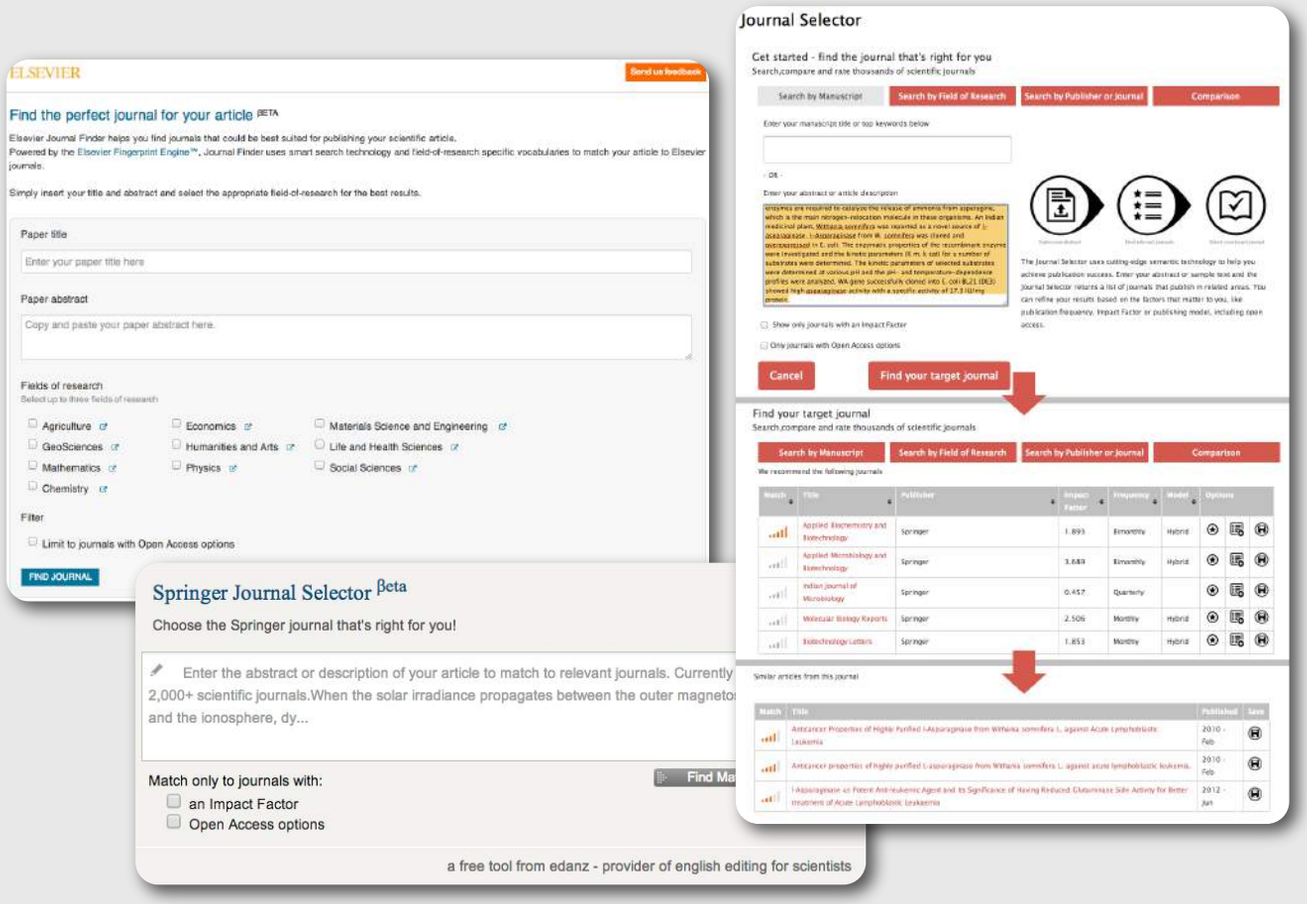
Various stakeholders in the scholarly publication community have made tools or information available to authors that can help with choosing possible target journals (Fig. 13).

These include:

- ***Scientific Reports* metrics**[24]
- **Edanz Journal Selector**[31]
- **Springer and BioMed Central's versions of the Journal Selector**[32, 33]
- **The Scopus "Analyze Results" tool**[34]
- **JournalGuide**[35]
- **Journal/Author Name Estimator**[36]
- **Elsevier Journal Finder**[37]

When journal editors reject a manuscript, if there are no sister journals that are considered suitable, pointing authors in the direction of one of these tools would be a helpful service. Journals would be seen to be nurturing a positive relationship with authors, softening the disappointment of rejection. Our survey results show that recommending alternative journals is still not widespread.

Figure 13. **Journal selection tools**
A selection of some of the free resources available to assist authors with journal selection: the Elsevier Journal Finder,[36] *the Edanz Journal Selector,*[30] *and the Springer Journal Selector.*[31]



COMMUNICATION OF EDITORIAL DECISIONS

Given the high proportion of authors who are confused by the response letters that journal editors send them (Fig. 8), improving this aspect of the publication process should be a high priority.

The following steps could be taken:

- **Provide authors with definitive statements regarding the status of their manuscript in clear and direct English that stand out from the rest of the paragraph**
- **List action points with the next steps that authors must undertake, for manuscripts that require more work**
- **Journal editors should ensure any conflicts between referee suggestions are resolved, or at least identified, before sending them on to an author**
- **Provide all information in clear, concise, and simple English**
- **Journals and publishers should implement better feedback and query systems for use by authors when communication breakdowns occur**

Editorial decisions and suggestions are often wrapped in subtle language in attempts to be polite or avoid confrontation. Unfortunately, ESL authors find it difficult to interpret these subtleties and are left uncertain about what to do next.

IMPROVING PEER REVIEW

Peer review mechanics are currently an area of experimentation as efforts are made to improve the system for all stakeholders. Some publishers have adopted a "cascade" or "transfer" system that partially addresses this issue; these are becoming more common, and indeed there are even consortia that allow for manuscripts to be transferred between different publishers without undergoing additional peer review.[38]

Several journals are trialing alternative forms of peer review. Interactive peer review allows authors the opportunity to discuss directly with referees the results of their manuscript review until a consensus is reached.[39,40] Chinese researchers at all levels have told us this would be particularly valuable. Another format, "cross peer review," involves referees commenting on each other's reports before the final comments are returned to authors; this would be particularly effective at reducing the number of conflicting comments.[41] Independent peer review by third parties, such as Edanz,[42] Rubriq,[43] Publons[44] and Axios Review[45] is another avenue that journals and publishers are considering.

We feel an absolute minimum requirement should be that referee comments are returned to authors even in the case of a rejection. This will assist authors in improving their manuscript and reduce the amount of redundant work for subsequent editors and referees; benefiting the STM publishing industry as a whole.

While the majority of efforts are focused on different forms of peer review, the structure and readability of referee comments have been largely ignored. Journals should consider how ESL authors read and interpret the comments provided after a round of peer review. As responses are usually required for each comment, and because of the language issues most ESL authors have, it makes more sense for comments to be posed as questions, or clear directions of what should be done.

Too often, questions and suggestions within referee comments are not immediately obvious if:

- **The style of English used by a referee is subtle and nuanced in an attempt to be polite**
- **There is no question mark at the end of a comment. This can confuse an ESL author, as these particular punctuation marks are strong indicators that a reply is required**
- **The referee also has English as a second language**

THE 'EXEMPLARY ARTICLE'

As suggested earlier, rather than providing dense, text-heavy instructions for authors, journals would better serve the author community by presenting a graphical anatomy of a published article they consider well-written. From our survey results, this feature is in high demand with over 80% of respondents suggesting they would find it helpful.

The *Journal of Applied Physics* provides a sample manuscript along these lines in their 'Author Toolkit',[46] while *Nature* has a simple guide to composition and what to include in a summary paragraph.[47] Although this is a good start, there is massive scope to develop this concept further into something we have referred to as the 'Exemplary Article' (Fig. 14).

Figure 14. **The Edanz-designed 'Exemplary Article' concept**
This sample is based upon an article published in Virology Journal by Shaw et al.[48] Users can choose which language they would prefer the advice to appear in.

CURRENT INNOVATIONS AND TRENDS AFFECTING ESL AUTHORS

STM publishing is experiencing an exciting period of change, with innovations occurring throughout the ecosystem.

We view the most important trends as the:

- **Increased power of authors, readers and funding bodies, which makes it essential for the industry to gain a deeper understanding of end users**
- **Emergence of new author-centric services, workflows and publishing models, which make it possible to re-imagine the publishing experience**
- **Growing research leadership of non-traditional markets, with attendant benefits and challenges**

There is an inherent overlap among the aforementioned trends that leads to opportunities for all stakeholders. For example, in response to the increased power of authors there is a growing shift towards author-centric approaches in publishing. This can be seen with respect to new forms of peer review, OA and article-level metrics, and the proliferation of useful author services such as Mendeley, Papers, Kudos, ImpactStory, SSRN and LabGuru.

Despite the benefits of such innovations for authors, as well as the rewards for those providing them, their uptake is often slower than hoped. Compared with their counterparts in the more established and generally conservative markets, authors in non-traditional markets might be more motivated and willing to adopt workflow innovations that have the potential to remove publication barriers.

The industry has a tendency to be preoccupied with single issues rather than addressing the over-arching trends we have detailed above. We feel though it is important to discuss how the OA movement fits in with innovations to the authorship experience. The OA movement has the potential to indirectly improve the culture of scientific communication in non-traditional markets. Because it focuses on the importance of sharing findings, OA can help counteract negative issues such as unethical practices and an over-emphasis on journal impact factors.

However, OA faces barriers in gaining acceptance among ESL authors.[49] There is still a general lack of awareness in ESL author communities, as well as a misconception that OA journals lack impact factors, and a lack of understanding for the rationale behind article processing charges.

Other innovations, such as the development of membership- or peer-review-based incentives like those of *PeerJ* and *Faculty of 1000*, or the rise of general-subject mega-journals such as *PLOS ONE*, can help level the playing field for ESL researchers.

With mega-journals, there are often fewer formatting requirements and the focus is stated to be on the quality of the science, no matter how an author chooses to present it. While such changes are moves in the right direction, they should not be limited to general-subject journals. It would be advantageous for all stakeholders if journals with a more focused subject area introduced similar innovations. In this way, authors would reap the benefits of such innovations, and better target their desired audience. With further additions of author-centric incentives such as fewer formatting requirements and loyalty incentives, it is possible authors might want to keep submitting to that same journal, thereby alleviating some of the burden of journal selection. However, to ensure equality across these systems for ESL authors, there is a need to embrace multilingual platforms.

Many publishers have started to move towards more visual offerings and requirements in their journals. Features such as video summaries and graphical abstracts are especially accommodating to ESL authors and readers.[50] These visual strategies employ much less English text for ESL authors to process, making it quicker and easier to understand the information being conveyed.[51] Hopefully, greater uptake of such offerings by all journals will result in the communication of more concise and comprehensible findings.

We feel the above innovations, together with our proposed solutions, will unlock value for all stakeholders, including publishers. To reap these rewards, the scholarly publishing community needs to gain a more thorough understanding of their primary resource—authors.

New forms of peer review, OA, open data, social sharing and article-level metrics are being widely discussed and trialed.

CONCLUSIONS

It is clear that ESL authors from non-traditional markets will contribute to most of the future growth in scholarly publishing. Therefore, journals and publishers need to shift their thinking, embrace these markets and authors, and adopt author-centric points of view. ESL authors need and want clearly communicated information that addresses their particular needs. Providing such resources will help guide them on the path to publication success.

Understanding and then addressing the unique needs of ESL authors will unlock untapped value for all stakeholders:

- **Positive and sustainable relationships between publishers and authors**
- **Enhanced branding and reputations of journals**
- **Higher quality manuscripts initially submitted to journals**
- **More efficient peer review because of the higher initial quality of manuscripts**
- **Greater recognition of authors at various publication stages**
- **Easier production processes**
- **Published articles that are easier to understand for a wider audience**

At the same time it is an opportunity, for publishers especially, to innovate the publication process with an eye towards easing the burdens ESL authors are currently feeling, implementing new systems, providing practical tools, and generally improving peer review practices.

In this report we have proposed the following solutions:

- **Providing better access to journal selection tools**
- **Improving aims and scope statements for journals**
- **Providing translated and simplified journal guidelines**
- **Referring ESL authors to vetted language services**
- **Increased use of graphical elements for writing guidance**
- **More precise communication from journals**
- **Improving peer review practices and their user interfaces**
- **Suggesting alternative journals upon rejection**

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ScienceNet.cn was launched in January, 2007. It reaches more than 3 million people per month and is the most well-known science media in Chinese research institutes and universities, as well as in many Chinese science communities scattered around the world.

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