Ten Years Of *Latin-American Journal Of Astronomy Education* RELEA: Achievements And Challenges For International Astronomy Education Development

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ABSTRACT

This study reviews 10 years of Latin-American Journal of Astronomy Education (RELEA), showing that the journal has become a valuable resource for publishing and highlights its pathway as scholarly journal. Furthermore, it is also a call to astronomy education specialists to consolidate their efforts considering similar journals worldwide. Publishing policies of the RELEA and their context are presented in relation to submission, refereeing and publication. The 75 articles published in 18 editions are analyzed and classified. The results showed an acceptance rate of 60.2%; an average of 7.5 articles per year/4.2 per issue. RELEA's authors are mostly based in Brazil (81.3%); articles target chiefly a school level (university education: 28.0%, high school: 28.0%); their main study focus is learning and teaching (34.7%) and general astronomy content (33.3%). Our results show that compared to other Brazilian journals of education, RELEA had twice as much astronomy articles. In the international scene there has been about a half of astronomy education research, but twice of astronomy in science education research. The challenges related to improve the article submission are discussed: how to increase their number, the submission of Latin American countries, and how to bring in the issues and subjects not addressed until now. It is also encouraged graduate studies, new lines of research in astronomy education, and advertising the journal in universities and schools for professors and teachers. Finally, future possibilities are mentioned given the International Astronomical Union's development programs.

Keywords: Astronomy Education Research; Astronomy Education Publishing

When an area of discipline-based education research is maturing as a respected and independent scientific discipline of its own, one of the basic requirements is the existence of regular publications that describe and document the scientific productivity within it. Some authors have already provided reviews, analyses and discussions on papers about astronomy education research. For instance, Lelliot and Rollnick (2010), analyzed published papers in journals as: *International Journal of Science Education*, *Science Education*, *Journal of Research in Science Teaching* and others. Andrew Fraknoi (2014) describes the history of published papers and journals on astronomy education research, as does Bailey and Lombardi (2015). More specifically about the history of journals, we can find review papers like Matthews (2015) who wrote about the journal *Science & Education* in 25 years as its editor. There are also some works dealing with the publication of papers on astronomy education research in peer-reviewed Brazilian journals of science education, including Marrone and Trevisan (2009) as well as Iachel and Nardi (2014). And, recently, books such as the scholarly Springer Brief compiled by Slater, Tatge, and Ratcliff (2016) summarizing astronomy education research in planetariums and museums have joined the scholarly literature base. What we are seeing here in total is science trained individuals writing about teaching and learning in their specific scientific-domain (Abruscato, 1996; Hobson, 1999, Matthews 2000). To provide further support for discipline-based astronomy education research, a group of professionally trained astronomers decided to found the

Latin-American Journal of Astronomy Education (RELEA) in 2002. The “first light” of the RELEA effectively happened in 2004 in its on-line electronic format.

Factors contributing to the launch of this the journal RELEA include the existence of an international effort dating from several years ago, which operates to enhance the debate and seeks for progress in Astronomy Education Research. Within this framework, there exist in several continents associations and related publications specifically dealing with Astronomy Education. Some examples are: the European "Association for Astronomy Education", which published the journal "*Gnomon*"; the "Astronomical Society of the Pacific" (ASP), responsible for the newsletter "*Universe in the Classroom*", and "*Teaching Astronomy in Asian Pacific Region*" in Asia. Later on, the electronic journal "*Astronomy Education Review*", hosted by the US National Optical Astronomy Observatories and the ASP were published between 2004 and 2013. Globally, the Commission 46 of the International Astronomical Union (IAU) (formerly called "Teaching of Astronomy" and presently "Astronomy Education and Development"), publishes the "IAU Commission 46 Newsletter", also in the on-line electronic format. Further efforts along these lines include the JAESE journal and a few other initiatives.

A recurrent theme that emerges from this brief listing of publications efforts is that there were no institutions or specific publications in Astronomy Education which congregated experiences and proposals from Latin-American countries. Thus, RELEA was imagined to be a forum for the publication of papers in astronomy education, and particularly to host the work of Latin-American countries in this area. The Journal is targeted to a readership of educators and researchers interested in astronomy education, teachers of all levels and interested people in general, and international in scope, not simply focusing only on Latin America.

The launching and initial steps were taken at the XVIII Annual Meeting of the Brazilian Astronomical Society (SAB) held in Florianópolis (Santa Catarina, Brazil) on August, 2002. However, it is important to remark that the Journal has no links with the SAB. The latter was very receptive to this initiative headed by some of its associate members, allowing the diffusion of the launching because of the judgement that such a Journal may be interesting for the whole astronomical community and bring a positive contribution to the astronomy education in general. However, and in spite of this attitude and the fact that most Brazilian members of the Editorial Board of RELEA are also members of the SAB, the new Journal does not represent the Brazilian Astronomical Society in any circumstance, it is not sponsored by the latter, and does not hold any relationship (formal or otherwise) with the aforementioned entity. The editorial guideline, publishing policy, contents, and managing of the RELEA are an exclusive responsibility of its Editors and Editorial Board. To limit the cost, RELEA is done exclusively online.

In August 2003 the home page of the Latin-American Journal of Astronomy Education (RELEA) was released, containing a first call-for-papers and information about its goals, Editors and Editorial Board and preferred style for the contributions. Several messages and announcements were sent to international publications to call the attention to the new journal.

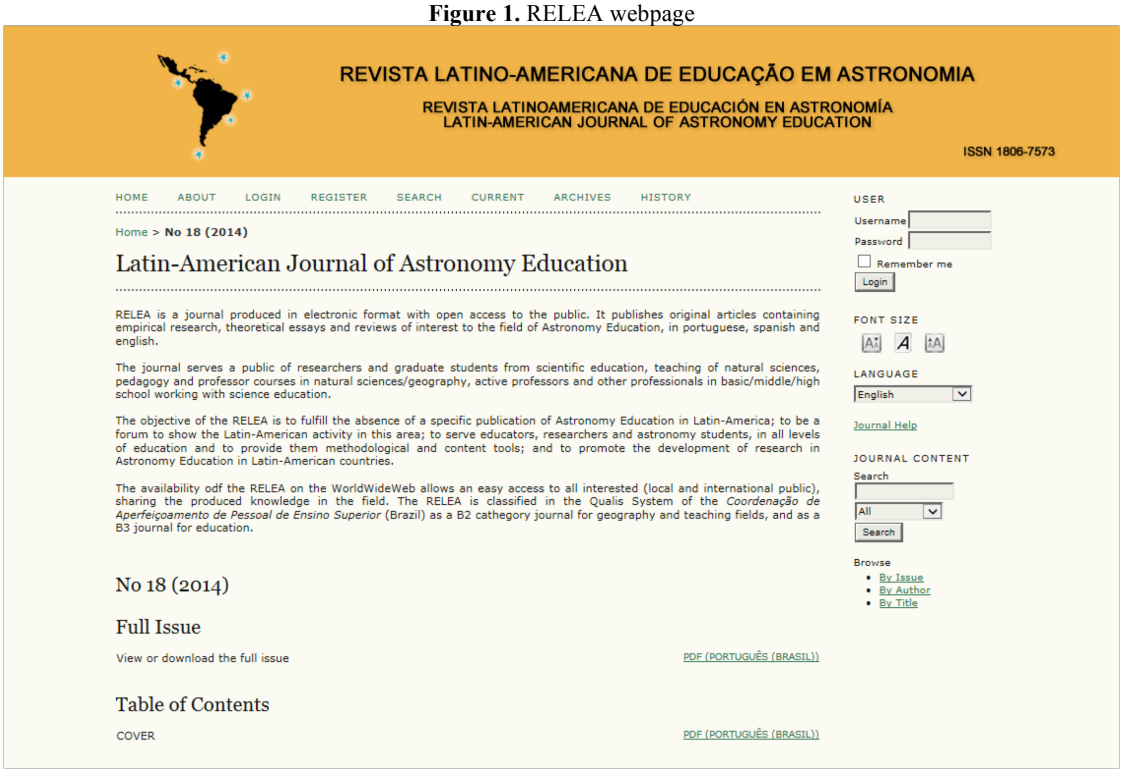
RELEA was finally launched in 2004 and it was hosted by the servers of the Instituto Superior de Ciências Aplicadas (ISCA), located in Limeira city (São Paulo, Brazil) until 2007. Presently, the journal site is hosted by the servers of the Universidade Federal de São Carlos (UFSCar), located in São Carlos city (São Paulo, Brazil), with the regular publication of two issues per year since 2008. RELEA is a journal produced in electronic format with open access to the public. It publishes original articles containing empirical research, theoretical essays and reviews of interest to the field of Astronomy Education, in Portuguese, Spanish and English. The publication is free of charge for the authors. The contents may be printed and copied for distribution for educational purposes without profit, just asking that a proper acknowledgement to the source be mentioned. The RELEA is registered in the ISBN and the adopted editorial procedures for publication demand blind refereeing by two specialized colleagues, selected by the Editors upon submission.

There is no *a priori* rule about the number of articles per issue or their length. These and other parameters will be in fact selected by the Editors, Editorial Board and referees, which will asymptotically establish how much and what to publish. The journal serves a public of researchers and graduate students from scientific education, teaching of natural sciences, pedagogy and teacher courses in natural sciences/geography, active teachers and other professionals in basic/middle/high school working with science education.

The availability of the RELEA via the Internet allows an easy access to all interested (local and international) public, sharing the produced knowledge in the field. The *Coordenação de Aperfeiçoamento de Pessoal de Ensino Superior* (CAPES) (a Brazilian federal agency for the support and evaluation of higher education) has a classifying system of journals, named *Qualis*, in which a number of levels (A1, A2, B1, B2, B3, B4, B5, and C) rank the journals according to a set of parameters collected directly and systematically from them. The scheme is publicly available (https://qualis.capes.gov.br/, in Portuguese) for each category. Presently the RELEA is classified in the CAPES Qualis System as a B2 category journal for geography and teaching fields, and as a B3 journal for education.

Since the end of 2014, when issue N.18 of the RELEA was published, the Journal changed its domain to the *Open Journal System* (OJS), which should facilitate the process of submitting, editing and access to the articles (Figure 1) (http://www.relea.ufscar.br/)

Figure 1. RELEA webpage



Given this history, it is worthwhile to pause and provide a 10-year retrospective of Latin-American Journal of Astronomy Education (RELEA). Publishing policies of the RELEA and their context are discussed in relation to submission, refereeing and publication.

As a first step, the 75 articles published in 18 editions are analyzed and classified by: year of publication, edition, the authors' institutions, school level, study focus and content.

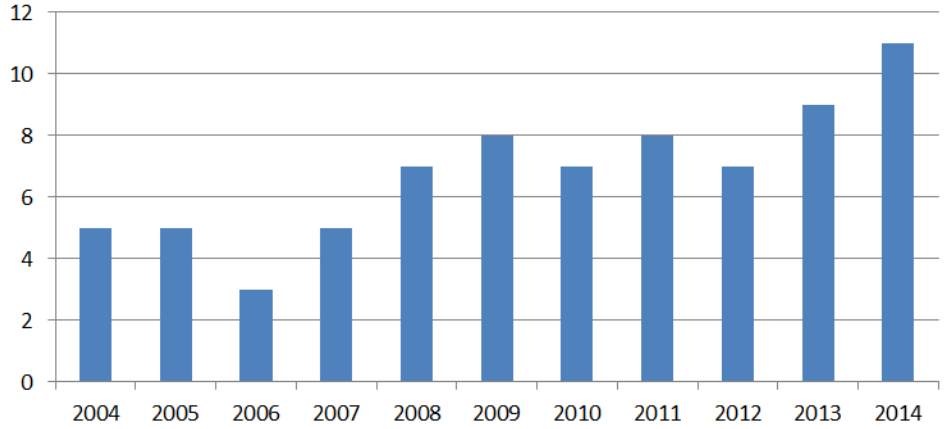
ANALYSIS OF THE PUBLISHED PAPERS

As is common for many nascent journals, initially the submission process was done exclusively by e-mail to the editors, who sent the paper to a pair of referees. If the referees' evaluations were opposite, the article was sent to a third referee. For each paper, the referees were chosen, whenever possible, to be one from the astronomy community and another one from the education community. All those practices reveal to constitute an appropriate policy for this kind of publication, and because of that they keep being adopted. We shall mention that the selection of referees from those different research fields to analyze the same paper uses to lead to very different reports, and even incompatible views – yielding a challenge to the editors, but helping to improve the accepted papers.

The group of referees was enlarged over the years, starting at 10 at the end of 2004, reaching 30 in 2007, and finally 80 referees at the end of 2014. This brought a necessary broadness to RELEA because a large variety of papers with different subjects were submitted over the years.

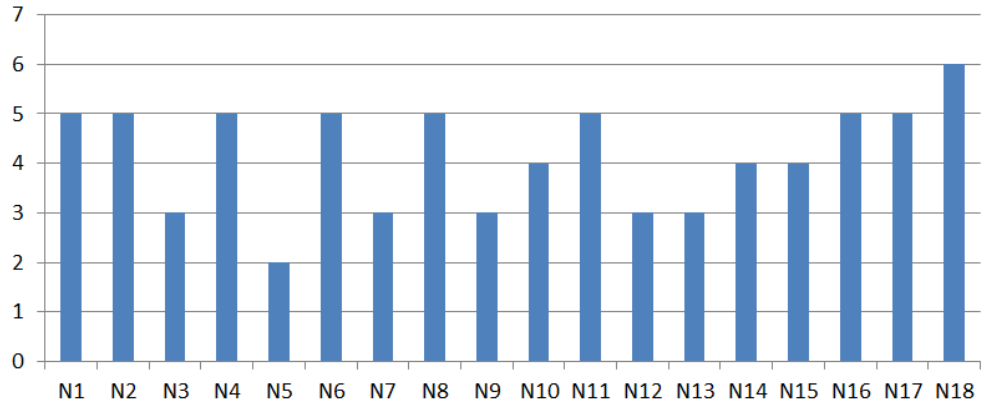
For an analysis of the number of published papers, initially we may discuss the very number per year and the average number per year (this last figure being 7.5 articles per year). In a general way, we note an increasing in the average and in the absolute number since 2008, when the journal started to publish two editions per year (Figure 2).

Figure 2. RELEA: Papers per year



However, when the number of papers per edition is analyzed, we note that the average is just 4.2 per issue. (Figure 3).

Figure 3. RELEA: Papers per edition



The review criteria are similar to related journals (*viz*., Slater, 2016). Scientific articles containing results of empirical or theoretical investigations, and essays on topics related to Astronomy Education are initially eligible. Articles reporting research on Astronomy Education Research are considered as investigations that generate knowledge, about teaching and learning of Astronomy and related areas. More specifically, the papers are analyzed to check their astronomy contents and education methodology, originality and contribution to the studies of the area. Some articles are rejected because they fall out of the scope of the journal, for example, dealing only with too specific or irrelevant contents; lacking on methodology of data gathering, treatment and discussions and/or lacking of bibliography.

The historical acceptance rate of the articles is 60.2%, for 113 submitted, 46 rejected and 68 published from 2003 to 2013 (see Table 1).

Table 1. RELEA: submitted, rejected and published papers from 2003 to 2013

68/113 = 60.2%

Year	Submitted	Rejected	Published
2003	4	1	3
2004	4	0	1
2005	9	3	6
2006	12	7	5
2007	6	3	3
2008	10	4	6
2009	11	3	8
2010	17	7	10
2011	10	7	3
2012	11	3	8
2013	19	7	12
Total	113	45	68

With respect to the country of origin of the authors (Table 2), we note that the great majority comes from Brazil (61-81.3%) and only a few from other Latin-American countries. In fact, only Argentina (6-8.0%) and Uruguay (2-2.7%) contributed with papers, but a very small number of the total. Concerning all other Latin American countries, there has been just one submission up to now (the paper was not accepted). Otherwise, there were contributions from other countries such as USA, Spain, and New Zealand. The submissions from USA, all made in 2013 were largely motivated, we suppose, by the unexpected closure of *Astronomy Education Review*, which happened at the end of that year, before being replaced by the new *Journal of Astronomy & Earth Sciences Education* (Fraknoi, 2014).

Table 2. RELEA: Distribution of papers by country of origin of the authors.

Country	N	%
Brazil	61	81.3
Argentina	6	8.0
USA	3	4.0
Uruguay	2	2.7
Spain	2	2.7
New Zealand	1	1.3

With respect to the school grade level or public outreach addressed in the papers, Table 3 shows the results of the classifications.

The largest percentage of works was related to university education (28.0%) and to high school (28.0%). This is explained by the fact that astronomy is not a specific discipline in the curriculum of basic education, and this dominant number somewhat hampers the discussion about how to improve the teaching of astronomical concepts starting at the elementary levels. The latter approach would take advantage of the high potential of development and the formation

of the teachers working in the formal school systems. Because of this, many works are related to teacher training. There is a small number of papers directed to the middle school (8.0%), elementary school (1.3%) and kindergarten (1.3%). Works on public outreach (4.0%) have been received and published occasionally.

Table 3. RELEA: Distribution of papers by school grade level.

Level	N	%
University education	21	28.0
High school	21	28.0
Unspecified	19	23.3
Middle school	6	8.0
Public outreach	3	4.0
Elementary school	1	1.3
Kindergarten	1	1.3

Table 4 shows the results found when the published works are classified by their focus. As a reference for the focus classification items, the items published in the research in the field of Science Education as suggested by Megid Neto (1999) were considered: curricular discussions/programs, learning and teaching, teaching materials, teachers' understanding, students' understanding, concept development, teacher's education, history and philosophy of science.

We observe that there is a predominance of papers on learning and teaching of astronomy (34.7%). These papers analyze teaching methods for specific contents of astronomy at many school levels.

Studies of students' understanding (17.3%), are the second largest group. Here we find studies aiming to diagnose the conditions of students and their implications in school performance or learning of science. These works deal with the identification of student's previous knowledge (i.e., his/her knowledge on a given subject before any formal education on it), his/her intellectual structure and models of thought or their views about science.

Works on the development and discussion of teaching materials (13.3%) constitute the third group. These are mainly authors of the papers that describe the use of various instruments for the teaching of astronomy content such as telescopes, planetariums, and other didactic models; education software; and/or the analysis of astronomy content present in school books and related materials.

The works on teacher's education (8.0%) address projects and courses for teachers of different school levels. Studies on teachers' understanding (8.0%), are related to the identification of teachers' profile, intellectual structure of their knowledge, their views of science, the general context of science education, diagnosis of pedagogical practices of teachers and of their own explanations concerning their conceptions of the educational process. Works on curricular discussions/programs in astronomy (6.7%) are the ones in which we find most of the suggestions about astronomy teaching and discussions concerning the insertion of astronomy into school curricula. In the group of the studies of history and philosophy of science (5.3%), we find studies on literature review in primary and secondary sources that recover forgotten events, facts, debates, conflicts and circumstances of the scientific endeavor at certain times. We find also works dealing with aspects of philosophy or epistemology of science related to conceptions of: science, scientists, scientific method, formulation and development of scientific theories, paradigms, and scientific models. Necessarily, these studies should have something to do with the education in the area of sciences, as the basis of curricula, teacher training programs, *a priori* conceptions of students and other implications for the teaching-learning process.

Studies related to non-school education programs (4.0%), feature papers about astronomy popularization programs for the general public, and exhibitions, typically performed by astronomical institutions such as observatories, planetariums, and museums. History of astronomy education (2.7%) addresses historical aspects of astronomy teaching, or the changes with respect to more specific aspects (teaching materials, curricula, legislation, teacher training, etc.), in a particular time of the past. Works on concept development (1.3%) are those which describe and analyze the development of astronomy concepts in the students' or teachers' thinking, resulting in processes of

conceptual change. Finally, studies on review of academic research (1.3%) complete the selected sample with works on state-of-the-art research on the academic and scientific level, among other topics.

Table 4. RELEA: Distribution of papers by focus of the study in education.

Focus	N	%
Learning and teaching	26	34.7
Student understanding	13	17.3
Teaching materials	10	13.3
Teacher education	6	8.0
Teacher understanding	6	8.0
Curricular discussions and programs	5	6.7
History and philosophy of science	4	5.3
Non-school programs	3	4.0
History of astronomy education	2	2.7
Concept development	1	1.3
Review of academic research	1	1.3

With respect to the topics of contents presented in papers (Table 5), the proposal of Bretones (1999) has been taken as a reference. Most studies do not deal with specific topics in astronomy; we labeled these as General (33.3%). These works present astronomy as a science and as a research area; studies of education experiences in museums, planetariums, observatories, and other centers; and proposed teaching programs on astronomy teaching. They do not focus on any specific scientific content.

Table 5. RELEA: Distribution of papers by topics of content.

Content	N	%
General	25	33.3
Sun-Earth-Moon system	20	26.7
Solar System	14	18.7
Positional Astronomy	6	8.0
History of Astronomy	5	6.7
Sky and constellations	4	5.3
Instruments	3	4.0
Stars	2	2.7
Galaxies	2	2.7
Cosmology	2	2.7
Time and calendar	1	1.3
Celestial mechanics	1	1.3
Astrophysics	1	1.3
Astronautics	1	1.3

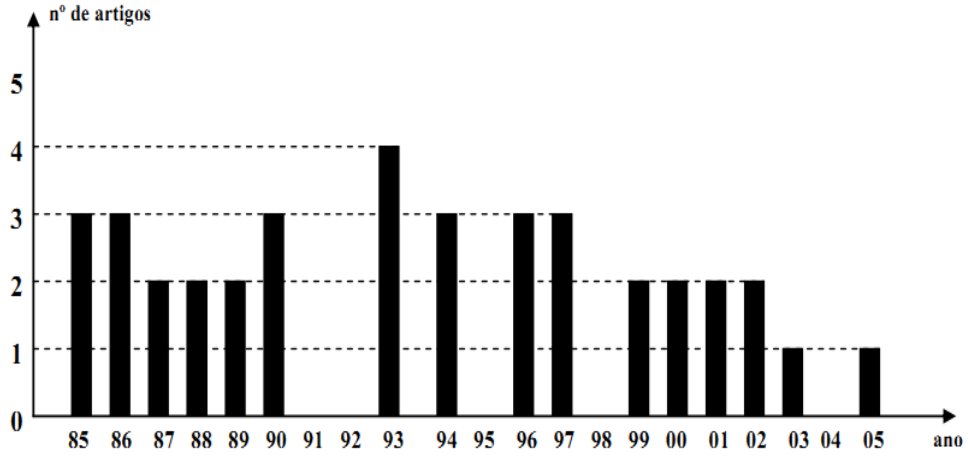
Studies of Sun–Earth–Moon System (26.7%) are the second largest group, and Solar System (18.7%) the third one. These studies are very common in papers in the area as similarly reported by Lelliot and Rollnick (2010).

Much less frequent are studies that deal with specific themes in astronomy, presenting many methods and materials about the education approach to themes such as positional astronomy (8.0%), history of astronomy (6.7%), sky and constellations (5.3%), instruments (4.0%), stars, galaxies, cosmology (2.7% each one), time and calendar, celestial mechanics, astrophysics and astronautics (1.3% each).

THE RELEA IN A REGIONAL CONTEXT

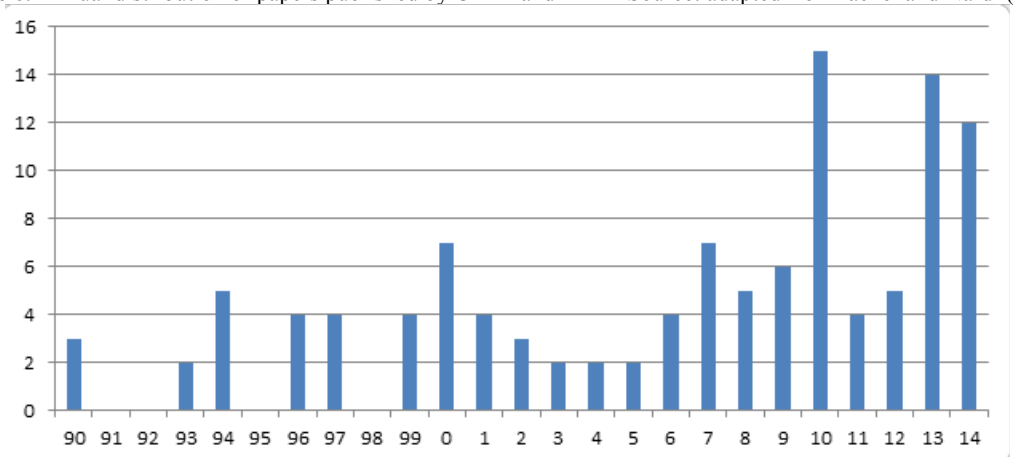
A comparison with the number of articles published in other Brazilian journals of science education, and an analysis of the international scene in relation to other type publications in that field along these ten years has been attempted. There are a handful of works dealing with the production of Brazilian journals of science education. We can mention Marrone Jr. and Trevisan (2009), who published a review on that subject which encompasses papers published in the *Caderno Brasileiro de Ensino de Física* (CBEF) from 1985 to 2005 (Figure 5).

Figure 5. Annual distribution of papers published by CBEF Source: Marrone Júnior and Trevisan (2009).



We can note that the CBEF had an annual maximum of 4 articles and an average of 1.8 articles according to Marrone Jr. and Trevisan (2009). Iachel and Nardi (2010) also presented a counting of papers published in the CBEF and in the Revista Brasileira de Ensino de Física (RBEF) from 1990 to 2008, Iachel and Nardi (2014) updated the statistics to 2012 and we updated to 2014 (shown in Figure 6).

Figure 6. Annual distribution of papers published by CBEF and RBEF Source: adapted from Iachel and Nardi (2014).



The total number of papers published by CBEF and RBEF has a maximum of 15 and an average of 4.6. Both cases serve for that comparison since the journals feature many similarities in scope and development with the RELEA. In contrast, the RELEA presents an annual average of 7.5 articles, which is much higher than the two surveyed journals.

As a cautionary remark, we know that there is a lack of update in respect of such reviews regarding the articles published in Brazilian journals of science and physics education, which make it difficult to do a more detailed analysis of the general production, because these surveys were published years ago.

With regard to the international panorama, the best reference was the journal *Astronomy Education Review* (AER), which published 19 issues featuring 255 articles between 2001 and 2013. The number of papers per year is shown in Figure 7 and the number of papers per edition is shown in Figure 8 (Fraknoi, 2014). For these numbers, the AER had an annual average of 19.6 articles per year (RELEA= 7.5) and an issue average of 13.4 per edition (RELEA = 4.2), which represents about three times of the RELEA´s numbers.

Figure 7. AER: Papers per year

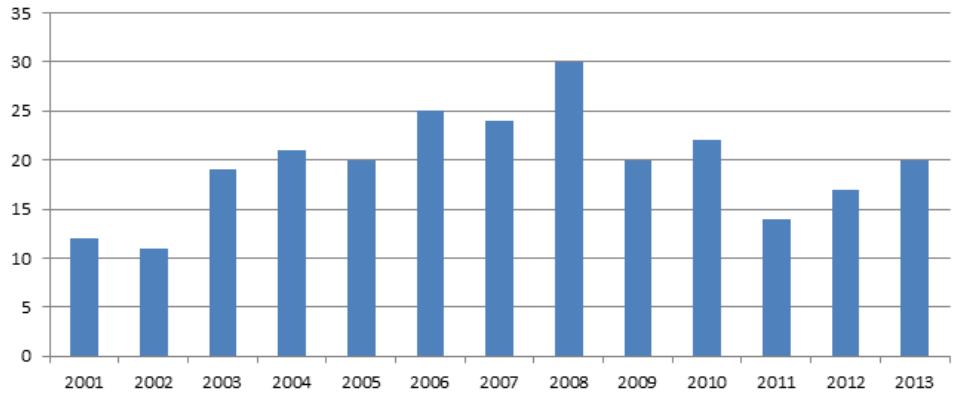
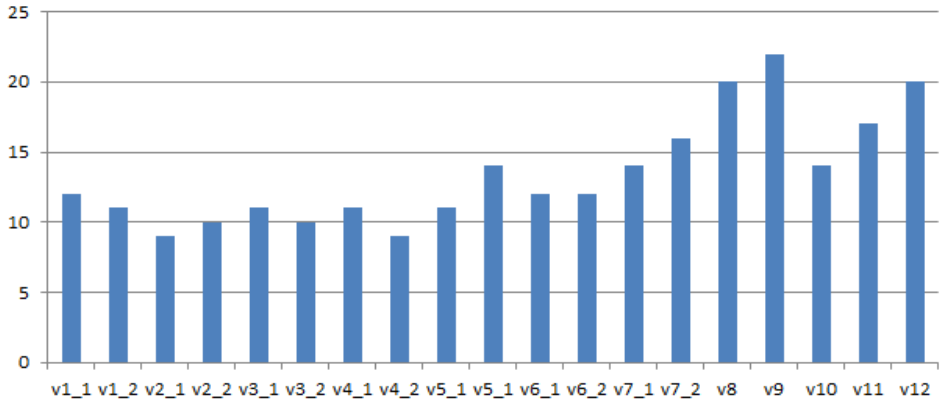


Figure 8. AER: Papers per edition



Another key reference in the international panorama was the journal *Teaching of Astronomy in Asian-Pacific Region* (TAAPR), which published 20 issues featuring 171 articles between 1990 and 2003, in 14 years. The number of papers per year is shown in Figure 9 and the number of papers per edition is shown in Figure 10. From these figures, the TAAPR had an annual average of 12.2 articles per year (RELEA= 7.5) and an issue average of 8.5 per edition (RELEA

= 4.2), which represents about twice the RELEA´s number (It is important to note that the high numbers of 1993 and 2003 were due to special issues for the proceedings of meetings).

Figure 9. TAAPR: Papers per year

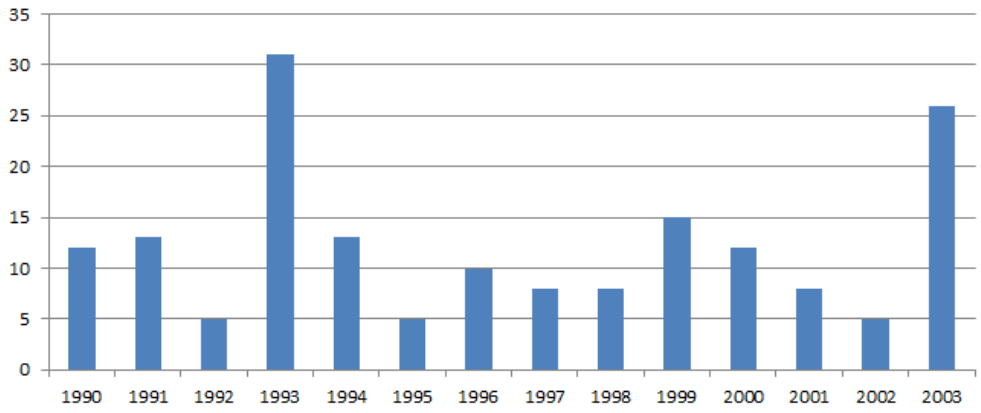
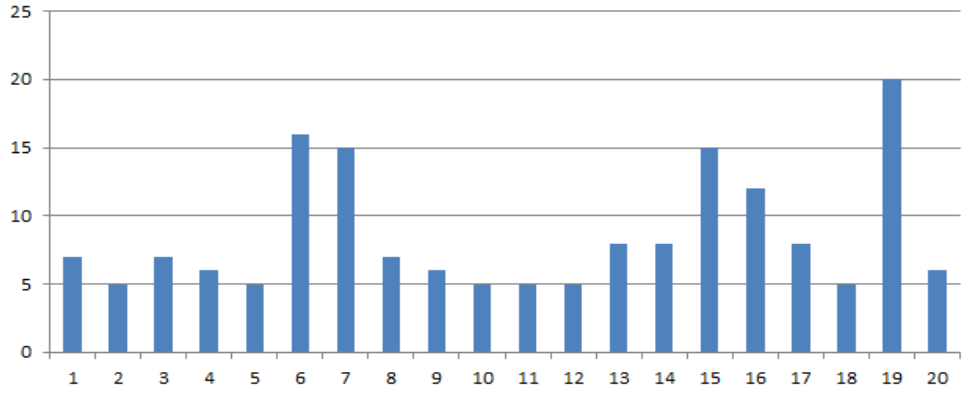


Figure 10. TAAPR: Papers per edition



As a related work, Lelliot and Rollnick (2010) published a paper quoting a total of 103 articles on astronomy education research published in 35 years (from 1974 to 2008). According to the authors:

> *Nearly a quarter of the articles were published in the International Journal of Science Education, while Science Education and the Journal of Research in Science Teaching together account for a further quarter. The remaining 56 articles are found in a variety of educational journals, mainly (but not exclusively) based in Europe and the USA.*

Taking this number at face value, the average of articles per year is 3.0; that is, smaller than the number of articles published by RELEA annually. These figures, although partial and resulting from just a few studies/numerical surveys of such publications, suggest that RELEA has published a satisfactory number of articles considering a comparison with those numbers of other publications. We should stress that this is the result of the combined action of the editorial team and the referees, which are representative of the whole community, and therefore reflects overall the consensus

about what and how much to publish. In other words, we may argue that an acceptance rate of ~60% should be quite stable even if the number of submissions increases moderately.

With regard to the above mentioned CAPES Qualis System, one of its requirements to promote a journal to the "A" classification is the publication of at least 8 articles per issue, a goal that is still not achieved, mainly because RELEA is a specific journal of astronomy education which does not reach this number within the current reality in our country/continent. Increasing international submission could help to boost the published number of papers provided the acceptance rate remains robust, as stated above.

There is a statement about papers published in journals on astronomy education research made by Fraknoi (2014) which may be relevant to the future of these publications, including RELEA. According to this author:

> *Although the pace of astronomy education research is greater now than it was before AER got started, it still may not be sufficient to support a research journal by itself. This, I suspect, is why JAESE has chosen to expand the coverage to the broader domain of earth science as well as space and planetary sciences. Only time will tell whether they will succeed, but many of us involved with AER and astronomy education wish them well as they begin.*

As a general remark, we believe that a substantial fraction of the astronomy education published material could be still hidden despite of its intrinsic value. This is, for example, the case of Asia, in which a great quantity of publications need to be surveyed and available in some way, especially those not written in English but in local languages, which will certainly contribute to references and future studies. More specifically, we believe it is necessary to digitize and make available the journal "*Teaching of Astronomy in Asian-Pacific Region*", edited by Prof. Syuzo Isobe and having published 20 editions in English between 1990 and 2003, and rescue more material not available for western English-speaking researchers. We already have contacts in Japan and intend to encourage the preparation of such files. Also the Journal *Gnomon* (http://www.aae.org.uk/#/gnomon/4551971989), only the editions from September 2002 to March 2011 are available, with gaps, and need to be made accessible. These are just two examples.

INCREASING PRODUCTIVITY OF THE FIELD

Although it is clear that simply increasing in the number of scholars devoted to researching astronomy teaching and learning might in and of itself increase the number of papers. It is possible to enhance the number of published papers by inducing the practice to develop works on science education in general, towards a publishing goal. There is still a major challenge with regard to the production of works, at least in the Latin-American context. The overall production of papers is still low, which may be caused by the low number of graduate programs on education, and more specifically in graduate science education programs. A challenge that we have to face is to stimulate works in the area through contacts with institutions, universities and national astronomy societies (in the countries they exist and are active), and through the organization of meetings, the promotion of campaigns for publications in the field etc. We have attempted that action in many opportunities. Examples are, for instance, the works we have presented with the specific objective of advertising RELEA during the Annual Meetings of the Brazilian Astronomical Society (SAB) (from 2003 on), the XIV Latin American Regional IAU Meeting (LARIM) held in Florianópolis, Brazil (2013), the Astronomy Education Alliance Meeting, in Portugal (2014), and IAU General Assemblies in Prague (2006), Rio (2009), Beijing (2012) and Honolulu (2015). The goal of those works was to present an analysis of articles published and show the necessity of advancing with regard to: producing and publishing more articles, getting articles from a greater variety of Latin-American and other countries, and training the community for a minimum quality writing of articles submitted for publication in a journal aimed at education research. It was also pointed out the need for a greater dissemination of the journal to increase the number of submissions, encouraging the diversification of contents and methods and increasing the participation of authors in general, and from Latin America in particular.

We would like to stress that the RELEA covers an ample scope of topics from a still limited number of regions. It is not imperative that new submissions should come from Latin-America, although the original proposal envisages such a growth. The issue of submissions diversity will be undertaken in a separate paper.

DISCUSSION AND CONCLUSIONS

Given that RELEA is now maturing, its future prospects in the international landscape can be further considered. The challenges related to article submission are quite clear: how to increase the number, encourage the submission of Latin-American countries and others outside the region, and how to bring in the issues and subjects not addressed until now. The results discussed above reflect which subjects are scarce and expected to receive more attention from the community. In order to boost the activity in astronomy education, we have also considered the possibility of encouraging graduate studies, new lines of research in astronomy education, and advertising the journal in universities and schools for professors and teachers. As a general feature we believe that the RELEA is performing well, constitutes an adequate forum for the scientific production as expected, and compares satisfactorily with other regional and international similar publications.

Further possibilities to easy the article production and submission can benefit from discussed International Astronomical Union development programs. Specifically, we suggest supported projects for the Task Force 1 (Task Force 1: Universities and Research) of IAU Office of Astronomy for Development (OAD), its advertisement and opportunities for volunteer IAU members and global projects for the development of astronomy education. The support of the proposed *Regional Nodes* and *Language Expertise Centers* is an important tool for this goal.

As a specific case, during our participation in a recent Astronomy Education Alliance Meeting, held in Cascais, Portugal, in September 2014, a survey and review of Portuguese publications in the area was suggested, which should begin in a near future. We believe that closer relations with colleagues from Portugal can be a beginning, and this survey could encourage the submission of more papers to RELEA by Portuguese authors.

With the beginning of the Language Expertise Center's operations we believe that this perspective can be expanded related to astronomy education research coming from other Portuguese-speaking countries. We also believe that such actions should raise the visibility of authors and institutions and allow future developments and collaborations, not only in Brazil but also on an international level, even beyond the Latin-American region.

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