

Advances of Research in Mathematics Education: Three qualitative transitions in process

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Abstract

Our journal is experiencing three related transitions in the directions of: (i) becoming more international, (ii) becoming more influential, and (iii) becoming more formative. As a tool serving the community of mathematics education research, AIEM is a project responsible for contributing to the development of this community through actions aimed at being put and impacting on the highest level state-of-the-art – which is necessarily international –, and at supporting researchers so that their articles are useful to these two aims. In this editorial, certain interpretations of ‘international’, ‘influential’ and ‘formative’ are problematized and then unpacked to prioritize scientific meanings.

Keywords. AIEM project; scientific criteria; becoming (more) international; becoming (more) influential; becoming (more) formative.

Avances de Investigación en Educación Matemática: Tres transiciones cualitativas en proceso

Resumen

Nuestra revista está viviendo tres transiciones conectadas en las direcciones de: (i) llegar a ser más internacional, (ii) llegar a ser más influyente y (iii) llegar a ser más formativa. Como mecanismo al servicio de la comunidad de investigación en educación matemática, AIEM es un proyecto de contribución al desarrollo de esta comunidad mediante acciones dirigidas a situarse e impactar en el estado del arte de mayor nivel – que es necesariamente internacional – y a apoyar a los investigadores para que sus artículos sean útiles a estos dos fines. Este editorial problematiza ciertas interpretaciones de ‘internacional’, ‘influyente’ y ‘formativa’ y apuesta por la priorización de significados científicos.

Palabras clave. Proyecto AIEM; criterios científicos; llegar a ser (más) internacional; llegar a ser (más) influyente; llegar a ser (más) formativa.

1. The AIEM project

The publication in May 2012 of the first issue of *Advances in Research into Mathematics Education* (“AIEM” in the Spanish acronym) entrenched the initial phase of the collective project aimed at establishing an official journal for the Spanish Society of Research into Mathematics Education, which would make our activity travel the world. We are therefore not at a moment of commemorating any of the anniversaries usually celebrated in the world of scientific journals. Nor is this a year in which we are changing editor or altering our title or any other similar issue. These they are occasions that do not go unnoticed even if they are not announced or celebrated through specific editorials. However, our journal project is now undergoing a second phase that is equally decisive, one that deserves to be highlighted, and which is characteristic of any undertaking in the intellectual field and in the circulation of ideas and knowledge. If, before 2012, the reasons why the Society should have a scientific journal were discussed and upheld, we must now enquire, in 2019, into the reasons for its subsistence and good health. In this second phase, AIEM is experimenting three transitions that are strongly connected to one another. Its achievement is due, in part, to the participation of the community that guides and drives the journal and that has worked at developing an impressive family tree from the very outset of the project. These transitions have several successive dimensions along the following lines:

- Becoming more international
- Becoming more influential
- Becoming more formative

For AIEM to become more international, more influential and more formative, the work required is above all qualitative, showing a clear commitment to three qualities that are inherent in the growth and development of any research community. As a tool at the service of the research community in mathematics education, AIEM has the responsibility to contribute to the development of this community through intensifying discrete actions aimed at (and having an impact on) the state-of-art at its highest level—which is necessarily international—and at supporting researcher-authors so that their articles are useful for both of these aims. These academic actions in particular involve concomitant technical actions aimed at gaining greater presence in databases and at obtaining measures and indexes that should not be confused with the essence of what is of genuine concern, reflected in the Agenda for Action 2018-2022 as published in 2017 by our Society. Ambit 1 of this Agenda (‘Generate spaces to facilitate and promote the communication and discussion of research into mathematics education’) refers to the qualitative commitment to convert the journal into a reference in the academic sphere through the publication of relevant and significant work. It is, in short, about making AIEM a journal that is read and studied by its potential readership. This is the most important form of recognition that can be given to a research journal.

2. Becoming more international

The path taken by AIEM and the project that it represents has accumulated a number of achievements, some still in process. The outset to the process of becoming more international is certainly linked to the publication of articles by authors having institutional affiliations to distinct parts of the world, but also to the incorporation of associate editors from Latin America and of academic advisors from a total of five continents. In addition, tracking citations of articles published in AIEM increasingly leads both to local journals in which Spanish dominates, and also to European and international journals in which English is the principal or exclusive language. These relationships, however, are not yet of a scientific nature and do not fully engage with the qualitative meaning of a research journal becoming still-more international. As a concept, ‘being international’ is difficult to define due to the manifold possible focal points and purposes that are thereby implied. From the relationships listed above, for example, one may infer the use of English and the diverse territorial affiliation of the authors, associate editors and advisors. But notwithstanding this, becoming (more) international is rather more complex than the result of a sum of countries and languages involved in producing a journal. These focal points are limited and are not broad enough; they do not meet academic criteria and the propensity to think of them as unique or to value them excessively must be challenged.

In the context of a journal committed to the development of a community of research, the meaning of ‘becoming international’ is inspired by the objective of publishing articles with empirical results and theoretical reflections that contribute to the advancement and progress of the state-of-the-art, based both on what is known and what remains to be known. It is this meaning, with an academic focus, that motivates our work in the editorial team and in the journal’s management team, in coordination with the advisory committee. And whilst reference to this objective may appear trivial, this is not the case at all. The dynamics, demands and logic of the academic market

often bring in their wake the frantic rhythms of article manufacturing even when, actually, one has nothing new to say. Consequently, articles do not always locate themselves within the state-of-the-art, or at least not explicitly so, nor is it clear how they address, modify, specify or analyse domains of knowledge reported in the literature. For AIEM, the process of becoming more international means guaranteeing the publication of articles that offer innovative, robust and accurate contributions to the research community in mathematics education. These articles must reflect academic and intellectual activity that takes us beyond the limits of the immediate context, that interacts with and from the existing state-of-the-art, that is a meeting place for the knowledge produced within the area, and that strives to communicate how the analysis of what is known links to what is obtained through this analysis. These movements by AIEM towards becoming more international have already begun and are, in fact, even now having an effect on our movements (also initiated) towards becoming more influential. All of this is key to ensuring that the AIEM project is not justified only by providing the Spanish Society of Research into Mathematics Education with an official journal, but also because it is—in and of itself—a scientific project.

3. Becoming more influential

An academic journal gradually becomes more international—in accordance with the academic significance of ‘being international’—as the articles that it publishes become more useful and influential in the research community of reference. A further consideration is to ensure that the journal gains ever-greater visibility, prestige, representativeness, reputation and influence with respect to that said community. Today, the influence held by our journal can be demonstrated in many ways. The accelerated increase in manuscript submissions over the past year is evidence in this respect; and, naturally, this is by no means unrelated to AIEM’s entry into the Scopus database. Further evidence are the figures provided by the bibliographical instruments applied to the journal—not to its individual articles—which are consulted by the editorial team and which denote an expansion of our zone of influence. Additional similar evidence is the number of visits to the journal’s website, the forwardings and downloads, and even the comments sent by email or via message forums to the team members. But again, these focal points are not academic, *sensu stricto*, and the biased use of simple measures, indicators and indexes should also be challenged for being, in effect, dissuasive substitutes for a fuller academic notion of influence.

In the context of a journal committed to representing a research community, the meaning of ‘being influential’ lies in the objective of marking and/or opening up innovative trends in relation to ongoing lines of study and specific knowledge gaps in the literature. In this regard, the consolidation of our annual monograph policy is evidence of the process initiated precisely to achieve this very goal. AIEM is published semi-annually and, since 2017, one of the journal’s annual numbers is monographic, which of course means that monographic numbers represent half of the journal’s output. From an academic perspective, there will be the need of assessing the importance each one of these specialist monographs represents at the time of publication and in a later period of up to at least a decade. At time of selection—both of content and of guest editor—and during preparation and publication, we seek to produce a volume on an area of study that compiles knowledge heterogeneously generated by different theoretical schools and, therefore, by more than one author and group, who may not agree on basic issues such as future directions to be taken. If it is done well, the monographic number never ceases to be, in some sense, current because it remains a compilation—if not exhaustive then at least necessarily exogamic—of the

development of a given line of study at a certain historical moment. It is still early to analyse the influence of the AIEM monographs on the academic communities implied. We must nevertheless anticipate their function of research innovation within the AIEM project through the selection, preparation and careful publication of each monograph.

4. Becoming more formative

The formative perspective, by which we refer specifically to the journal's capacity to serve as a basis for academic training and scientific professional development, is fundamental in attaining the objectives of becoming (more) international and (more) influential. This perspective relates to the process of publishing and, eventually, approving improved versions of articles. In this process, the specific participants involved have a key role. These participants are the authors-evaluators-editors, with the so-called double/single blind external peer review and the final review by the associate editor and the editor-in-chief both of these subject to forthright ethical declaration as a sign of seriousness and equanimity. Once again, such methods of review and of subsequent technical and style-related editing are parameters that should not be confused with the challenge of providing support to authors which is academically formative as regards the content of their writing. Bringing together a team of associate editors and a pool of reviewers and advisors who are professional academics and specialist researchers in the area of knowledge pertaining to the journal is a necessary condition. However, the academically formative character of the publication process requires the critical adoption of sophisticated objectives relating to quality of content. Compliance with these objectives should not be taken for granted without actions aimed at achieving them.

The vast majority of manuscripts received at AIEM go through a lengthy period of review, often with up to three rounds and with up to three reviewers who are specialist researchers in the authors' area of study. The publishing process takes its time in part as a result of the commitment by the AIEM team to make the journal a formative, learning and professional-development tool for researchers in mathematical education. Any academic journal must accompany the always-ongoing process of training and professional development in research within the corresponding area. The meaning of 'being formative' should therefore be sought in how knowledge is provided by and exchanged with the authors of a manuscript regarding the state of the art in the area of research study to be published, and regarding the potential impact on and specific contribution of this research to what is known and what remains to be known in the context of that state of the art. From this perspective, highly standardized issues such as reviewer anonymity in the peer-review process—which, paradoxically, is not usually maintained in the authors' relationship with the editor, although it falls to that editor to justify the final decision—do not appear so relevant, and may even be counterproductive. When the review process is not blind, the arguments provided by reviewers can gain in transparency, consistency, rigour and academic detail in discussion with the authors. For this reason, AIEM is respectful of the anonymity of the authors and, at the same time, flexible when faced with the growing practice of reviewers who take the initiative to break protocol and include their name at the end of their review reports. It is no coincidence that this practice is increasingly taking place, in a more general manner and in academic journals from a variety of areas, despite the guidelines laid down by the main publishing corporations who continue to recommend the double anonymity of author and reviewer.

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