

experience: that is, a particular experience must be common enough that it first fades into the background, so that it becomes overly-familiar for us. It would be, then, that one's guard would be down when an unexpected attack is made, *i.e.* something completely unfamiliar has happened. At a neurological level, Austin (1999) describes this phenomenon of encountering the unexpected as the brain telling us that it does not know what to do or make of a certain situation. There is a pause and then we realize "all of a sudden" that we have "discovered" something new, as if it were there all of the time.

Perhaps it is not surprising to see how Nunokawa's sense of surprise manifests itself. By assuming that the world exists "out there", separate from us, it then becomes possible to think about planning a lesson which includes a surprise embedded in the task beforehand. Certainly, the right conditions must be present in order to be surprised. For Nunokawa, this condition is the creation of one or more planned gaps. However, this raises the question: a gap between what?

The world is full of surprises. Every moment is a surprising moment. Now. Now. And, now. Did you notice anything surprising? To use a *cliché*, I wouldn't be at all surprised if you said "no". But why are we not surprised (in every moment)? To repeat, surprises happen *for* us - not *to* us. To be surprised means that we must be attentive to our current, lived, embodied experiences in the world. In other words, we must be open to being surprised so that we might be prompted to be surprised. But the world cannot necessarily cause us to be surprised without our partial collusion - particularly when we are inattentive to it and the world fades into a background of over-familiarity.

To end, this is not to say that Nunokawa's analysis of the mathematics lessons he examines is wrong or not useful. It is more that the question of what creates a surprise for us comes from individuals' own experiences and so cannot be answered by saying that surprises can be created in isolation from ourselves. Certainly, Nunokawa's analysis of surprise as emerging from a gap is in line with my and Casti's sense of a discrepancy between two states. But Nunokawa and I depart on one important matter: the phenomenon of surprise is an *emergent* form arising from some locally-determined interactions between two systems - one closed (our own knowledge of the world) and the other open (the world) - which creates enough of a discrepancy between the expected and the unexpected to produce the lived experience itself. In any event, it might be better to simply leave open the idea that any of these students that Nunokawa writes about actually experienced surprise.

Notes

[1] This is an organizational and interpretive strategy borrowed from the work of Brent Davis, which is presented and discussed at length in *Engaging Minds* (Davis *et al.*, 2000).

[2] Kelly (1994) argues that when the word *emergence* is scrutinized, it disappears and becomes "meaningless". Nevertheless, he writes that complexity scientists would suggest the meaning of emergence is like: "that organization which is generated out of parts acting in concert" (p. 458). Here, I would stretch Kelly's notion of organization to include phenomena that manifest novel, unanticipated structures, patterns, properties or processes.

[3] These meanings for and connotations of 'surprise' are taken from Webster's Ninth New Collegiate Dictionary (Miriam Webster, 1983) and the Oxford English Dictionary (Simpson *et al.*, 1993).

References

- Austin, J. (1999) *Zen and the Brain: Toward an Understanding of Meditation and Consciousness*. Cambridge, MA, The MIT Press.
- Casti, J. (1992) *Reality Rules: Picturing the World in Mathematics*, New York, NY, Wiley.
- Davis, B., Sumara, D. and Luce-Kapler, R. (2000) *Engaging Minds: Learning and Teaching in a Complex World*, Mahwah, NJ, Lawrence Erlbaum Associates.
- Fisher, P. (1998) *Wonder, the Rainbow, and the Aesthetics of Rare Experiences*, Cambridge, MA, Harvard University Press.
- Kelly, K. (1994) *Out of Control: the Rise of Neo-Biological Civilization*. Reading, MA, Addison-Wesley.
- Merriam-Webster Inc. (1983) *Webster's Ninth New Collegiate Dictionary*, Springfield, MA, Merriam-Webster.
- Nunokawa, K. (2001) 'Surprises in mathematics lessons', *For the Learning of Mathematics* 21(3), 43-50.
- Simpson, J., Weiner, E. and Proffitt, M. (1993) *Oxford English Dictionary*, Oxford, Oxford University Press.
- van Manen, M. (1990) *Researching Lived Experience. Human Science for an Action-Sensitive Pedagogy*, Albany, NY, State University of New York Press.

Revista EMA: an Unexpected Challenge

LUISA ANDRADE, PATRICIA PERRY

Contributing to the consolidation of the group of mathematics teachers in Columbia as a professional community has been one of the aims that has guided the work of *Una Empresa Docente* [1] over the last ten years. Such a purpose refers to the reconstruction and enrichment of certain aspects of the culture in which the teacher's work is embedded: in particular, those that relate to the systematic achievement of classroom experiences [2] and the diffusion of accounts of such experiences and their results. In the present short piece, we present and discuss some of the difficulties we have faced while encouraging the publication, in the *Revista EMA* journal, of the classroom experiences of teachers. Facing them while maintaining the established objectives of the publication creates, in turn, questions with respect to the role that the journal editors could and should play.

Introduction

For three years, *Una Empresa Docente* produced an information bulletin about projects, reflections, courses and events carried out in mathematical education by our work-group and other mathematics teachers in the country. When the *Revista EMA* journal was created in 1995, it put forward as its main objective to contribute to the consolidation of the group of mathematics teachers of the country as an academic community, by means of three definite purposes.

- To supply all of its members with access to the information that is relevant for the profession they share. This includes knowing about the work of

colleagues and its results; knowing about what is happening within the national and international community in terms of events, projects and publications; knowing directly from national and international researchers what their concerns and considerations are with respect to what happens in the classroom, etc.

- To give each member (or group of members) the opportunity to share with the rest of the community their work and results, with the aim of subjecting it to criticism and thereby validating it.
- To create space for the construction and sharing of ways of working and communicating such work that are essentially in accordance with internationally-accepted standards.

Since the beginning of its publication, the journal consists of five sections, determined by their content. They are: the researchers' article section, the teachers' article section, a section with reviews and summaries of recent books in the area, with the aim of interacting with the reader and where is possible to react to what is stated therein, and a section dedicated to contact among the community with events and related news. The journal has a general editor who is responsible for the entire publication and five assistant editors, each in charge of a section. The aim of the first section has been to publish in each issue an article from a foreign researcher and one from a Colombian researcher. The second section was designed mainly to contain papers from local teachers. These aims have always been hindered by the difficulty of obtaining national papers.

Today, after seven years of work during which twenty-one issues (compiled in seven volumes) have been published, we ask ourselves: how did we embark on a project of such magnitude? With the perspective given by experience, we can look retrospectively and see that it might have been a thoughtless decision, with the good intention of mending the observed weaknesses, but without a clear image of how much work it would require to make the project succeed. It was a decision where we failed to consider the difficulties that would arise as we went ahead in trying to attain the three aforementioned goals *simultaneously*.

Some difficulties found

The difficulties that we have found during the process of publishing *Revista EMA* point mainly to the situation and the real condition of mathematical education in the country, as well as those of possible authors. Although we knew of these conditions, we did not take them as an obstacle when setting forth the project of creating the journal. In consequence, it can be said that such difficulties were foreseeable and therefore we should try not to lose courage, for it was necessary for someone to take that first step along the path that has to be walked if we want to have a consolidated community in the future.

The gathering of teacher papers

Mathematical education as a field of knowledge (with its

own subjects of study, methods, interests, limitations, advances in other parts of the world, bibliographic resources, etc.) is only recently beginning to be recognized by the bulk of the mathematics teachers in the country. Additionally, the cultural environment in which the mathematics teacher develops uses mostly oral expression. In such a culture, it is unusual to read or write about matters that relate to professional activities.

Similarly, teachers have not developed their ability to express their ideas in writing, arguing a thesis or maintaining their position on a specific subject. Given the previous remarks, by the time the journal was first published, it should have been obvious that collecting publishable teachers' papers on mathematical education would be hard work. The teacher education programs that were beginning to appear in our country around that time (some at the graduate level, some as part of the continuous in-service training effort and some as part of research projects) could have presented an opportunity to supply articles for the teachers' section. Even with this possibility, since the first issues of the journal were published, those who have led that section have been faced with the difficulty of finding enough material to publish in it.

In the last year, thanks to a promotional effort that has taken place, the circle of people with access to the journal has been growing and, with it, the number of people who see it as a place and an opportunity to share their work and experience. In consequence, we presently receive almost continuously articles to be considered for publication, especially from non-Colombian authors. Because of this, and taking into account that the acquisition of national papers is still an arduous task, we have been ready to consider for that section articles from foreign teachers, although this deviates from our original goals.

The quality of the experience described in the text and the quality of the text itself

In taking the decision to start the publication, we also neglected to consider carefully enough the effort and ability required from authors to produce an article that is suitable for publication in a journal. The production of such an article, even one based on the report of a task that takes place as a part of a teacher's training program (whether at the initial or graduate level), implies going a long way where there are seen to be problems that refer to the written expression as well as the experience described. It can be remarked, however, that the difficulties that will be mentioned shortly are also present in many of the national and international papers.

In most cases, the main problem lies in the quality of the experience described in the paper and report. Frequently, the processes carried out are not rigorous and systematic enough to make the written account of such events feasible. Through the texts, one can glimpse difficulties related to the planning and development of the experience reported. Specifically, we often find that systematic observation of relevant aspects of the experience is missing, even though such aspects would provide information about attainment of the desired objectives.

Although the teacher usually plans the observations,

and designs means for recording the data, the analysis and interpretation of such data usually lacks rigor. They are often based on intuition and impressions, referring more to the students' reactions than to other observable aspects that are more directly related to the goals of the task. Besides, since part of the teacher's work has almost always been to search for bibliography, it is usual to find the transcription of theories that are not consistent or clearly related to the tasks in question.

It also happens that there are problems with the presentation of the ideas in the text. We do not refer only to the inherent difficulties that are present when writing a paper, like decisions about what to present, what to summarize, how to present the information clearly, etc. Here the situation is critical, and it conveys great difficulties because of the above-mentioned characteristics of our community. Many texts reflect the difficulty the authors have expressing relevant information and limit themselves to giving partial accounts of the personal perceptions about the student activity they describe.

Sometimes, the authors describe the context or the designed tasks, but fail to mention their development. In other instances, there are visible problems with the organization of the content that are reflected in poor and confused structure, with too few or too many unrelated sections and whose titles often do not correspond with their content. Additionally, the wording is usually unclear, with problems in the use of verbs, the use of synonymous adjectives on the same noun, repetition of words in a phrase, etc. The use of rhetorical or stereotypical phrases and affirmations without explication or justification is also noteworthy.

The aforementioned problems are even worse when taking into account that they refer not only to the quality of the article, as an image of the quality of the journal, but that a published article can also be taken as an example or set the standards that could guide another author in the writing of articles.

In an effort to formalize the elements that should be taken into account for the publication of a teacher's paper, *Revista EMA* has established criteria. As to the subject of the article, this should be identifiable as a subject of study for mathematical education. Although much writing has value from the purely mathematical perspective, we consider it vital to the delimitation of the field of mathematical education in the country that the texts explicitly address the teaching and/or learning of mathematics. The subject should also be of interest to the bulk of the public of the journal, the country's mathematics teachers. With respect to the structure of the paper, it should be adequate to convey what it tries to, and the relations among its parts should be clear. Thus, the paper should include an abstract, a first section where an account is given about its intentions and parts and a last section which adequately closes the exposition.

Related to the representational view (content) and the presentational approach (style and form) (see Freeman, 1994) of language used by teachers in their documents, the choice of words, the *expression* of what is said and the *voice* who talks should be clear, ideas should be stated neatly, should be relevant to the topic to be treated and should give a complete view of the subject; assertions and conclusions should be

properly justified. In short, the writing should present the reader a clear and complete picture.

It is therefore not surprising that based on these criteria, most papers receive significant observations by the editorial committee that imply their rejection in their original form. Although this situation presents itself mostly in the papers submitted by participants of the teacher education programs implemented by *Una Empresa Docente*, it is also present in many of the papers that are received from local and foreign teachers.

The way to operate

Although we acknowledge that contributing to developing the communication abilities of the teachers was not our explicit intention when the journal started, it is clear that the exercise of sharing their experiences in writing in the form of a publishable paper can become an opportunity for professional and personal development, especially for those who are just getting started in this process. It is clear, then, that a space is required where the teachers have a real possibility of meeting the requirements of the publication.

The necessity of facing the mentioned difficulties in a manner consistent with the goals of the journal has generated a particular way (in some sense) of proceeding: to get involved with the authors in a long and sometimes demanding process of editing their papers. This process implies a revision of the events to be reported, the modification, complementing, up- or downsizing of the content and the elaboration of many versions of the document. With the aim of keeping this process within reasonable limits in terms of time and effort, it is carried out only after selecting the papers that have at least the minimum quality required to, eventually, increase it to meet the set standards. The position that *Revista EMA* has taken, surely one that could be challenged, presents in turn a question about the role of the editors.

This situation, which naturally takes place with the consent of the authors, has been marked by having many cycles of interaction, stages that can be further complicated by the need for electronic media when the authors live outside of Bogotá. First, the comments of all evaluators, as summarized and complemented by the section editor, are handed back to the author. With these, the editor tries also to identify the parts that need to be changed and to make suggestions about possible improvements. The teacher is left with the commitment to rework the text and sometimes to review the documentation related to the experience.

After some time, a new version of the paper is produced, which is often better but does not yet meet the standards. This type of work can be repeated a number of times, until either both parties are satisfied or a point is reached where this joint editing process can make no further progress. It is often concluded that the origin of such a situation lies in the different points of view and abilities of the author and editors. The points of view differ in what is important in the work done, about the significance of a given situation in the teaching or learning of a topic, about the information that a result can convey, etc. The abilities that differ are those related to writing an academic text and the definition of what is noteworthy in it.

Since the author has dedicated time and effort to the process of improving his text, we consider it important not to lose what has been achieved. It is then undertaken to use additional strategies. A personal interview with the author is made, where the weaknesses of the document are discussed. In these interviews, we try to deepen our understanding of the differences to see if they can be overcome. Based on this information, a last effort is made to have the author modify his or her text and produce a final version, hoping that he or she also has a better understanding of the objections that have been made to his or her text.

We observe that this is not always the case: the supposedly final version of the paper keeps some of its faults. Not to publish it would reflect a conflict between the journal's objectives and the established quality criteria. To publish it would pose a dilemma about the editor's role. If the paper is published in the state it has achieved from the editing process, the aforementioned problems about quality and setting an example emerge. If, on the other hand, the editor modifies the paper with the permission of the author, new questions arise about the authorship and the preservation of the author's original ideas. Consequently, this process of interaction questions our involvement with the papers.

Final considerations

When creating the *Revista EMA* journal, the real conditions of our environment and the type of work that was required to attain our goals were not carefully considered. After seven years, it seems it was naïve to expect that the creation of a means of communication that offers teachers the opportunity to share their experiences would be enough to enable them to write and to do so with quality.

Although we do not have a precise idea of the effectiveness of the interaction process that takes place for the publication, we believe that we have contributed to the education of teachers in the aspect of written communication. Comments from various persons, mostly foreign authors, thank us for our contributions and acknowledge the pertinence of our actions and the careful and detailed

work that is done in the revision of the paper, work that sometimes allows substantial improvement.

On the other hand, it has been evident that, through the interaction and the changes made to the papers, the process has helped the authors to clarify the experiences that are the subject of the text and to become aware of some aspects related to it. This perception has been reinforced by the opinions of some authors who refer to this effect. With respect to the editors, this work has been very helpful in improving their grammar, wording and organization, as well as sharpening their perception of the weaknesses in the papers and so strengthening their ability to review them.

When the writing of the paper has been almost parallel to the development of the experience, this has somehow influenced the activity itself, and through it to the paper. For example, in some of the education programs carried out by *Una Empresa Docente*, the opportunity has been given to make suggestions related to observation of the activity; aspects like when and how to do it, what aspects to take into account, etc.

In spite of the difficulties and the large effort that this labor implies, and of the objections that arise, the *Revista EMA* journal maintains this space. It is one where it is possible to interact, to contribute, to ease and to enrich the job of reporting experiences in writing, in a way that motivates the reader to write and embraces the opportunity of taking part in what is seen as a beneficial process.

Notes

[1] *Una Empresa Docente* is a research center in mathematics education located at the Universidad de los Andes in Bogotá, Colombia.

[2] By 'experiences', we refer to the entire process lived by the teacher while preparing, implementing and observing any curricular design, whether for a single class or for a longer period.

Reference

Freeman, D. (1994) 'The use of language data in the study of teachers' knowledge', in Carlgren, I., Handal, G. and Vaage, S. (eds), *Teachers' Minds and Actions: Research on Teachers' Thinking and Practice*, London, The Falmer Press, pp 77-92.