
Didactics is a Science in its Own Right. The First Edition of sciED Journal Has Been Published.

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It might seem that the flood of newspapers, various magazines and scientific literature on the market leaves no room for new projects. Yet there are still topics that tend to be overlooked even though they have a large potential not only as to the size of their audience but also as to their genuine importance and long term contribution to a society depending on education. One such project on the scientific journal market is the electronic project sciED – Scientia in educatione. Its editor-in-chief, doc. RNDr. Naďa Stehlíková, Ph.D., head of the Department of Mathematics and Mathematic Didactics at the Faculty of Education of Charles University, describes the project.



Launching a new journal is not an easy task so the reasons behind its creation must have outweighed the difficulties which inevitably accompany the launch of a new scientific journal. What were those reasons?

One might say that there are enough magazines but, for example, in the field of mathematic didactics, there are journals which either focus on the popularization of mathematics or on scholarly mathematics, and then there are those for teachers of mathematics. But you cannot publish a research report on mathematic didactics in a journal for teachers of mathematics; it would need to be a methodical instruction or something attractive for the teachers. We can also publish articles in general pedagogical journals, such as Pedagogika, Orbis Scholae or Pedagogická orientace, but they don't quite match the focus of field didactics. We are lucky that various field didactics, at least in mathematics and a number of other subjects, have existed as independent scientific disciplines for many years in our country but in fact we don't have a forum of our own. It means that research papers written by our doctoral students and ourselves practically had no public platform. We published them mostly as part of foreign conference proceedings or in foreign journals but we believed we could present them to a Czech audience as well. So we agreed with other sciences which are in a similar situation: they have popularization magazines but no scientific journal where they could publish articles in Czech as well. While it is important to publish abroad and in a foreign language – and I applaud that of course – I believe on the other hand that our domestic audience should be informed of the results of our research as well. There being no such forum was therefore one of the reasons behind the project.



doc. RNDr. Naďa Stehlíková, Ph.D., head of the Department of Mathematics and Mathematic Didactics at the Faculty of Education of Charles University, editor-in-chief of sciED

What was the immediate impulse for overcoming the long term absence of a scientific platform for mathematic didactics and science didactics?

The main impulse came last year when an expert group from the Education Ministry's Accreditation Committee assessed the levels of doctoral studies in mathematic and science didactics. They also came to evaluate our doctoral studies (which had received accreditation as early as 1992, so it is one of the three oldest doctoral studies in this country and the only one which is called mathematic didactics; others have different names). We passed the assessment test successfully.

The expert group was led by Professor Stuchlíková who told us something along the lines of, 'Why don't you try and take the lead in mathematic didactics research in the whole country?' But I don't want to produce norms and instruct others as to how they should conduct research or what research into mathematic didactics should look like. So my colleagues and I thought that if there were a specialized journal, the form of sharing our findings would take a natural form. We would publish high quality research articles, and other people in other departments, mainly doctoral students who are learning how to conduct research, might use them as inspiration. So the journal would take the lead, but in a natural way. **Let me get back to whom your journal is targeted at. You mentioned the scientific public in the fields of mathematic and science didactics, and then the audience which is the same as your writers, that is doctoral students, master's students, your colleagues from the faculty or other research institutions, perhaps from abroad, and also school teachers of mathematics and sciences. If I looked at your journal through the eyes of a teacher who teaches those subjects at a primary or secondary school, I might think that research is one thing but practical education evolves in its own direction and at its own pace. What will a teacher find in your journal for his or her practical work?**

Our journal is not targeted primarily at teachers. Let me start with what they will not find in it. They will not find methodical instructions. If that's what they are looking for, they can look at existing magazines which I believe are numerous, in mathematics in any case, at least two in the Czech Republic. But if they are interested in the way children think in mathematics or what motivation they have for learning physics, they can take a look at our journal. They might find articles examining for example how various communication patterns influence the understanding of mathematics, what types of questions are conducive to good mathematical knowledge etc. They will find inspiration there, but not straightforward methodical instructions or specific directions. If they are interested in the way children think and how they acquire the knowledge of mathematics or other sciences, they can turn to our journal.

According to which criteria did you design the structure of the journal? Is it based on different fields or is it divided into sections?

It is not structured according to fields but rather according to the nature of the articles. Primarily, we want to publish research articles and also theoretical studies. It is a section-based magazine regardless of whether the article concerns mathematics or some other subject. The first issue features sections titled Theoretical Studies, Research Studies, and Surveys – those are actual surveys of doctoral studies. We assume we will also publish discussion topics and news about research in individual fields, for example about different research projects or doctoral studies, news about dissertations underway etc.

Where should sciED be heading? Do you have a goal or a vision?

Yes, our vision is to improve the quality of didactic research in the Czech Republic, which is quite a strong vision because it is not altogether easy. Last year, the evaluation expert group examined the level of research in those fields around the country and concluded that there were shortcomings and something needed to be done. Our further ambition is to consolidate the terminology and criteria of research quality in individual field didactics. Subject didactics are somewhat disintegrated in that each one has its own language and methods, which may be similar because we more or less borrow them mainly from pedagogical research and also from abroad. So we would like to consolidate the terminology somehow but that can't be done from a position of power – such as an expert in general didactics saying: 'That's what we shall use.' That could also be one of the goals of the journal – collecting research articles from different areas on one platform where the terminology and quality criteria could gradually converge.

Is there a direct link between the improvement of mathematic and science didactics and research in those fields and better pedagogical practice in schools, reflecting eventually in the final outcome – the level of knowledge among the students?

That's what I believe but it is a long term goal. It is not a straight line – when research is carried out, it looks perfect and seems to work, it's not always applied in schools right away. The conditions are different in schools and it may not work. Then you need to look for adjustments. Eventually that's what research should aim at – not at perpetuating itself but rather producing impulses for school education. From the point of view of the individual field didactics represented in our journal I can say that we are definitely heading towards that goal, but when there is an amendment or a proposed amendment concerning school education, we want it to be based on research rather than some intuitive feeling. It can often be spot on, but it may not, or the situation can turn out to be much more complex, which is what research actually shows. When research was started into children's thinking in mathematics and other subjects, it found out that it was not as straightforward as we had imagined. From this point of view a great deal has been achieved but the road to practical outcomes is not straightforward at all as experience proves all around the world. But we definitely have that ambition.

Thank you for your time.

Translation: Pavla Horáková



sciED - Scientia in educatione

(Marie Kohoutová)