EDITORIAL NOTE

Editors in Chief

Suzanne Gatt
Malta Council for Science and Technology, Malta
Suzanne.gatt@um.edu.mt

Annette Scheersoi
University of Bonn, Germany
a.scheersoi@uni-bonn.de

Inquiry in Primary Science Education is an open-access online journal founded by the Pri-Sci-Net team (www.prisci.net) involving about 30 primary science educators from a number of EU Member States. Our goal is to provide space to primary science inquiry (for children aged between 3-11 years) as a knowledge area in its own right. The Journal is aimed to promote the exchange of ideas and sharing of experiences related to doing inquiry with young children at an international level. Research in doing science inquiry with primary level children has been growing in recent years (Delclaux & Saltiel, 2011; Gatt & Theuma, 2012). The large number of papers at the ESERA conference in the early years and primary level demonstrate this increase in research interest (ESERA, 2013). This Journal is a response to this increasing interest. The intention is to provide a place to publish for those who have an interest in early years and primary science and who want to share their work with other fellow academics. We hope that this volume will be the first of many to come.

The Journal is also being set up to bridge the gap between research and practice such that inquiry can have a greater opportunity to find its place in the classroom. Therefore it also aims to include both academic publications on research in inquiry, as well as articles reflecting practical experiences from practising teachers in our special section 'Inquiry notes'. There will also be a section for reviews of relevant publications. This Journal thus encourages those teachers who are also becoming researchers through their further studies, to send in their work to the Journal. While IPSE is a peer reviewed Journal, it also aims to provide support to emergent academics as well as to practising teachers who are researchers and practitioners.
The Journal is being published to reflect the Pri-Sci-Net team's understanding of what inquiry at primary level involves and through which we believe young children should learn science. While we are open to different versions of inquiry as well as to related work, we would like to share with our readers, our vision of what inquiry in primary education involves. In our vision, Inquiry-based science is a teaching and learning framework with implications about learning science, learning to do science, and learning about science. In this framework:

In this framework: **Children**

- engage actively in the learning process with emphasis on observations and experiences as sources of evidence;
- tackle authentic and problem based learning activities where the correctness of an answer is evaluated only with respect to the available evidence and getting to a correct answer may not be the main priority;
- practice and develop the skills of systematic observation, questioning, planning and recording to obtain evidence;
- participate in collaborative group work, interact in a social context, construct discursive argumentation and communicate with others (talking science) as the main process of learning;
- develop autonomy and self-regulation through experience.

The teacher scaffolds and guides learning by providing a role model of an inquiring learner. The teacher does not function, in the eyes of the children, as the sole bearer of expert knowledge. Instead, the main role of the teacher is to facilitate negotiation of ideas and to highlight criteria for formulating classroom knowledge.
Assessment is mainly formative, providing feedback to the teaching and learning process for all classroom participants.

This vision defines what characteristics inquiry-based activities are to have. We promote the testing of prototypes in authentic practice, their iterative refinement, and continuous evolution of the design, as it is used in practice. Close cooperation and networking between primary science education teachers, teacher-trainers and researchers has been experienced as most valuable within the Pri-Sci-Net team, and we wish to continue to support contributions to a lively exchange and collaboration with the setting up of this journal. The target audience thus can include primary teachers, science educators and researchers, young researchers, policy makers, and all those who have young children's science education at heart.

This first edition includes a number of contributions which come from both within and outside the Pri-Sci-Net partnership. The first volume will include this editorial note, three papers, and one book review. We intend to have one invited paper in each volume. The contribution for the first volume cannot but not be from one of the main drivers in primary science at international level. Wynne Harlen who was keynote speaker to the Pri-Sci-Net international conference held in Cyprus in September 2013 within the ESERA Conference will thus provide the opening paper. Wynne Harlen's paper sets inquiry in the context of other pedagogical approaches and argues how constructivism, formative assessment and inquiry have some characteristics in common but each making unique contributions to children's learning in science. She warns against over-simplifying inquiry by equating it only with 'practical work' or 'hands-on' activities or meaning that children have to 'discover' everything for themselves. A model of developing understanding through inquiry is presented and used to show the importance of inquiry skills in this process. This is followed by suggestions and examples of teachers' questions to promote progression in developing these skills.

The second paper comes from within the Pri-Sci-Net partnership. Christian Bertsch, Suzanne Kapelari and Ulrike Unterbruner write from Austria about the evaluation of a series of inquiry-based lessons on the role of plants as oxygen producers and their impact on i) students' attitudes towards independent investigation, ii) conceptual understanding and ii) understanding of characteristics of scientific experiments. This paper tackles the contested issue of how much science content learning takes place as a result of inquiry-based lessons. Students' interest for student-centered investigation is also taken into account. This paper argues that inquiry-based learning helps students develop investigative skills such as fair testing.

The third paper focuses on Design and Technology fairs as part of pre-service teacher training in Cyprus. Alexandros Mettas and Costas Constantinou write about an innovative way in which university education can help pre-service teachers become better problem-solvers and also develop the capacity to promote children's competence in problem solving through design activities. They describe how a "Technology Fair" is used as part of a pre-service teacher-preparation program in Cyprus and through which they place an emphasis on design and modeling activities. This innovation was evaluated through a series of measures at the beginning, half-way and at the end of the Technology Fair. The study investigated the influence of a such activity on helping pre-service student teachers develop problem-solving skills by working with primary school children to complete and present a technology fair project. Although not directly tackling inquiry, this paper looks at problem-solving skills and design which are also skills within inquiry-based learning.

Finally, the Journal includes the review of the book 'Talking and Doing Science in the Early Years: A practical guide for ages 2-7' just published by Sue Dale Tunnicliffe from the Institute of Education, University of London who is one of the pioneers in early years science as well as a member of the Pri-Sci-Net partnership. This book focuses on doing science with young children and also highlights on the importance of inquiry even within the pre-school age level.

We hope that you find this first volume an interest read on an academic and practical level. We also take the opportunity to invite other science educators, teacher trainers, teachers and particularly young researchers in their early careers to submit papers to our Journal.

References

Delclaux, M. & Saltiel, E. (2013). An evaluation of local teacher support strategies for the implementation of inquiry-based science education in French primary schools, Education 3-13. International Journal of Primary, Elementary and Early Years Education, 41(2), 138-159.

Gatt, S. & Theuma, G. (2012). Inquiry-based learning in the early years through storytelling. Journal of Emergent Science, 4, 19-24.

ESERA (2013). Science Education Research For Evidence-based Teaching and Coherence in Learning. Proceedings of the ESERA 2013 Conference, http://www.esera.org/publications/esera-conference-proceedings/science-education-research-for-evidence-/ accessed on 20/5/2014.