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Continuing professional development: evolution, complexity and variety in science communication training needs

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Abstract

This commentary seeks to spark further discussion on the continuing professional development in science communication, presenting comments from practitioners who were asked to reflect on the competences and skills their profession requires, and to envisage what kind of training might provide them. This introduction presents some common issues that emerge within the comments: the necessity to face rapidly evolving professional landscapes, to answer to new missions and roles, to consider the growing impact and potential of new technologies. Alternative training methods are also discussed.

Keywords

Professionalism, professional development and training in science communication; Science and media; Science centres and museums

There is a recognition that continuing professional development benefits both individuals (in terms of new skills acquired) and the organisations for whom they work. In the context of public engagement in science and technology, we might also expect benefits for the public, if all those involved in communicating science, whether in museums, newspapers, TV and radio or involved in the design of exhibitions or the production of media, have the opportunity to develop related knowledge and skills. However, even where postgraduate courses are available, they are unlikely to meet the needs of all professionals working in science communication; the variety of different types of communicators involved, which not only vary in terms of format and medium, but also include practitioners involved in STEM engagement full time, as well as those who only occasionally participate in STEM activities, mean that training needs can be both quite specific and change over time as new formats, approaches and opportunities evolve.

Short training courses are becoming increasingly common thanks in part to national and international funding programmes, such as the Erasmus plus financing line of the European Commission. These courses, though, do not meet all existing needs — they do not cover all professional profiles and are not available in all countries; they may not cover all pertinent content or the latest developments in practice; and they may not be sufficiently tailored for the specific needs of a particular group of professionals.

In the December 2015 editorial we have started a discussion on challenges and opportunities related to these courses [Rodari and Weitkamp, 2015], this highlights:

the multidisciplinary nature of many science communication projects (e.g. exhibitions) and therefore the need of a multidisciplinary approach to the training; the differing needs and interests of course participants, which in many cases might include both senior and junior professionals, scientists and researchers, and people coming from different countries and even continents; the lack of official recognition for the acquired competences, there is no accrediting body for these short courses. This can result in resistance from some organizations to encourage the participation of employees and to invest in training.

This commentary seeks to spark further discussion of this important topic, presenting comments from practitioners who were asked to reflect on the competences and skills their profession requires, and to envisage what kind of training might provide them. While the commentary does not cover the whole variety of professions and roles involved in STEM engagement, it does give us a fair idea of the complexity of the science communication field and the variety of challenges it faces.

Despite the variety of fields from which the authors are drawn, some common issues emerge within the comments.

All Authors describe their professional landscapes as fast evolving, and point out that these transformations both require, but make challenging, the design of training that goes beyond an initial academic background and even the experience acquired within the first years of professional work. Andy Ridgway refers to a new information "ecosystem" in which science writers and journalists must operate. This new ecosystem comprises many more formats and media than was the case only two decades ago and, what it is really more challenging, the distance between producers and receivers is blurring: scientists and lay people are actively involved as information brokers and content providers and can not longer be considered as mere audiences.

Similarly museums and science centres are undergoing a process of diversification and expansion of their missions, which requires new skills and competences. As Antonio Gomes da Costa, Maria Xanthoudaki and Peter Higgins point out, new models of communication and new interpretations of what learning is are pushing visitors to the centre of the stage — understanding visitors is a must, and therefore to know how to know, listen and address visitors' interests and needs is also a must. In fact, this field is moving even further toward dialogical, participatory formats, raising new challenges for those working in the field. The challenge of understanding the audience is also crucial for media that imply the physical passivity of the public, such as documentaries. This is particularly true when considering complex and controversial issues, as Louis Nadelson underlines. Moving beyond visitors, producing wildlife and science films and science exhibitions involves collaboration with or consideration of many other professional groups and stakeholders. Overall, the variety of actors, some of which have new and competing roles, seems to be a feature that crosses the whole science communication field.

Another driving factor of these evolving landscapes is without doubt new technologies. Social networks and personal communication devices are changing the information system (cfr. Catapano and Ridgway) but also need to be considered

in most communication projects, including exhibition development or facilitation in museums. In filmmaking and exhibition development there are continuous technological developments that change the way that science is communicated, opening up new possibilities. Regardless of whether specific skills are provided by specialist technicians, all communicators need at least a basic level of knowledge and continuous updating on new media opportunities (cfr. Higgins and Nadelson). In a culture increasingly visual, where new media offer a plethora of dynamic, multimedia experiences, communication officers and science journalists cannot avoid going beyond the written word, and should be able to include in their communication visual tools, infographics, animations, short videos… (cfr. Catapano and Ridgway).

Other training needs and problems are more profession-specific, and I invite the readers to go through the papers of this commentary, which not only discuss the challenges but offer rationales and details for what the Authors consider possible effective professional development journeys in their field. These journeys, the Authors also suggest, might go beyond the usual formats for training courses.

National and international professional congresses and fairs are crucial to stay up-to-date in most professions, providing insight into its trends, the new practices and technologies, and may be especially useful for senior professionals, who also benefit from the networking and informal exchanges provided at these gatherings. Conferences increasingly also offer training opportunities, as is the case for the Ecsite annual conference. Such training aims to satisfy the needs of both senior and junior professionals. Starting nearly ten years ago with a short course organized by the Ecsite Thematic group for the explainer professional development (THE group, today The Facilitation group), it is now common practice at the Ecsite annual meeting that the two days that precede the main conference host many short seminars with small audiences that aim to offer self-reflection opportunities or training on very specific issues.

Less experienced professionals may need more structured training. But, as Louis Nadelson proposes, these rookie practitioners might also make use of other alternative training practices, such as individual coaching, which are not very spread in the public engagement in science and technology field. A personalised and particularly involving professional development experience might be necessary especially when the training cannot consist of a mere passage of information and practical skills but needs to produce a complete change of mind-setting and promote the capacity to go from practice to research and vice versa. Training is not only about acquiring competences and theoretical knowledge (which of course are both necessary), but in many cases it should be also a "transformative experience". Speaking about the professional development of museum educators Maria Xanthoudaki hopes for a training experience so deep and memorable that it matches the experience museums aim to offer to their audiences (cfr. Xanthoudaki): "Exactly as we preach for visitors, we need to shift training from content-centered to learning-centered (…) that is, allow for meaning to be constructed actively through opportunities to engage with 'material' and to connect material to the trainees' self-directed interest and personal experience".

That approach might take museum learning experts (and others!) "in a completely different direction to the dominant pressure towards accreditation and

formalization". A very interesting point, which we offer for discussion and for future contributions.

In fact, considering how complex the topic we have tackled in this commentary is, and how much was left behind (e.g. all discussions on the academic programmes on the communication of science) we plan to open shortly a call for papers for a special issue on the professional development in science communication. Let's stay in touch.

References

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