MOTIVATING FACTORS FOR SCIENCE COMMUNICATION IN LATVIA

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Abstract: There is a public demand for communication of scientific findings that account for fragmentary expression of activities included in different science communication models. This study identifies factors facilitating the involvement of the scientific community in science communication. The primary data were obtained by a qualitative method of in-depth, semi-structured, expert interviews involving ten representatives of the Latvian scientific community relating to exact sciences, life sciences, and humanities and social sciences. The study distinguishes two categories for engaging the scientific community in science communication: a formally recognized approach and one involving a third party for organizing the communication.

UDC Classification: 316; **DOI:** http://dx.doi.org/10.12955/cbup.v5.1042

Keywords: Science communication, motivation, public engagement of science.

Introduction

Apart from the traditional responsibility, i.e., the creation of knowledge and education, the contemporary scientific community has several obligations relating to dissemination and sharing of knowledge. These activities include communication within the framework of the scientific community, so that exchange of knowledge is effective. However, one of the greatest challenges of science communication is with the lay audience. Over the last thirty years, science communication has become a topic of discourse in Europe. In this time, science communication has transformed from an initial monolog of the scientific community (informative function) into a dialogue with society, with society a participant of the scientific development. Nevertheless, numerous studies have concluded that in most cases, societies of Europe and the United States of America have no information about scientific discoveries and theories, although their interest in scientific activities is high. This study focuses on identifying factors that motivate the scientific community of Latvia into systematically participating in science communication.

Literature Review

Science communication is continually evolving. As indicated by Massimiano Bucchi (2008, p. 68), "In many countries, and at the European level, funding schemes and policy documents shifted their keywords from 'public awareness of Science' to 'citizen engagement'; from 'communication' to 'dialogue'; from 'science and society' to 'science in society'." These changes can be divided into three models: the deficit model, the dialogue model, and the participation model, which can coexist as policy instruments and do not exclude each other (Hetland, 2014). As admitted by Jenni Metcalfe (2014), the theoretical models of science communication demonstrate different interactive levels and directions. The deficit model needs the least interactivity between participants, as it involves one-way science communication by the scientific community. The dialogue model facilitates greater interactivity because two-way communication between scientists and society is organized. However, the participation model foresees the highest level of interactivity between participants, because it predicts involvement of all stakeholders in solving and developing a particular issue. Nevertheless, the question of how to motivate the scientific community to participate in dialogue with the lay audience remains open. Several hypotheses for organizing science communication have been proposed. According to Bauer and Jensen (2011), scientists live in a 'golden cage' and do not see the necessity (demand) for any involvement in public activities. They considered that activities targeting public participation differ with the type and intensity of approach used by scientists at the center of the scientific world as well as those in the periphery, and public engagement activities result from the institutional hierarchy. This hierarchy is the area of activity of senior participants from scientific institutions. These authors also argue that public participation reflects a model characterized by a particular scientific discipline; that public engagement and intensity in the scientific world has generally increased, and public involvement represents imaginary rather than actual changes in the culture of scientific research institutions. As well, they considered there existed a compromise between the engagement in research and that in pursuing public involvement because scientists who are active in one area will be less active in another. Also, they regarded there existed a compromise between public participation activities and professional growth perspectives, since the activities that are targeted at public engagement do not facilitate the development

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of a scientific career and the structure of public engagement activities has changed from knowledge distribution (outreach) to dialogue.

As emphasized by Bärstad (2011, p. 18), "Academic culture is to some extent reflected in the scientist's motivations, or the lack of them, to engage in public communication." To develop the communication between the scientific community and the rest of society, the Royal Society of Great Britain together with Research Councils United Kingdom (UK) and Welcome Trust conducted a study: Factors Affecting Science Communication (The Royal Society, Research Councils UK, Wellcome Trust, 2006). This study identified initiatives for facilitating the involvement of the scientific community in science communication. These initiatives included additional funding for organizing science communication, particularly to cover the costs of working hours of persons involved. The study also found that scientists are willing to participate in science communication events organized by other institutions. As well, they considered that science communicators would attract scientists in the process and support from the management of scientific organizations or structural units would be recognized as a bonus for one's career. The research conducted by the Royal Society, Research Councils UK, and Wellcome Trust (2006) resulted in the following three recommendations. First, the sponsors of science and institutions organizing higher education should develop a definition and define the goals of science communication and public engagement for a uniform understanding. Second, it is necessary to raise the awareness of young scientists about the involvement in science communication. Third, there is a need to establish agencies organizing science communication that would encourage scientists to participate, mainly for the purpose of centralized coordination of the process.

To facilitate implementation of strategic communication, in the case of Latvia, it is necessary to identify factors promoting the involvement of the scientific community in science communication.

Data and Methodology

The study was based on primary and secondary data. The secondary data involved research and regulatory enactments. Primary data were obtained using a qualitative method of in-depth, semi-structured, expert interviews of 10 Latvian representatives of the science community from fields of exact sciences, life sciences, humanities and social sciences. No limitations of the data collected or its processing were identified during the study. The acquired data were analyzed according to the qualitative method of content analysis. Based on theory, categories were formed in the course of the deductive analysis to reflect factors that would facilitate the involvement of the scientific community in science communication.

Results and Discussion

The Sustainable Development Strategy of Latvia until 2030 (Cross-Sectoral Coordination Centre, 2010, p. 40) addresses the rate of knowledge sharing and availability to the local population, indicating that the outcomes of state-funded research should be made publicly available through the Internet, in addition to that facilitating access to knowledge. What concerns knowledge sharing to lay audience, according to the Guidelines for the Development of Science, Technology, and Innovation for 2014–2020 (Ministry of Education and Science, 2013, p. 27), public presence of science is relatively small because science popularization is not purposefully planned. Thus, the importance of science and technological development as a factor of economic development at the level of public opinion and decision-takers is undermined. It should be highlighted that at the decision-making level particularly the development of science and technology is associated with economic growth, bearing in mind the guiding principle of the National Development Plan of Latvia for 2014–2020 (Cross-Sectoral Coordination Centre, 2012, p.12-13). This guiding principle is 'Economic breakthrough,' which is associated with three priorities: 'Growth of the National Economy,' 'Human Securitability,' and 'Growth for Regions.' Thus, the role of social sciences and humanities in Latvia in this period of science commercialization, considering that the Smart Specialization Areas (2015, p.3) defines fields with potential for cooperation between the industry and universities, foresees economic transformation aimed at increasing financial knowledge by investing in research, innovation, and promotional activities. The strategy involves all industry, science and education representatives who create smart specializations in the areas of biomedicine, medical technology, bio-pharmacy, and biotechnology where knowledge is crucial for profitability, as well as involving those providing education on such knowledge (Smart Specialization Areas, 2015, p. 3). The Social Sciences and Humanities (SSH) Ecosystem Analysis (Jaunrades Laboratory, 2016) determines

the need to implement a communication strategy by singling out several target groups. These groups include entrepreneurs, society as a whole, and SSH specialists who are informed of their relevant contribution. By involving them as a target group in the formation of such contribution, the most significant benefit is their mutual understanding, desire to cooperate, and development of common projects (Jaunrades Laboratory, 2016, p. 39). Research projects should include a component of active communication that clearly demonstrates the contribution to a specific target audience or societal group (Jaunrades Laboratory, 2016, p 41). This component could be ensured by SSH representatives. At this point, the question arises as to whether scientists, including SSH representatives, associate themselves with new responsibilities or are informed of such, considering the existing legal basis and societal impetus.

In the study, two categories were identified to facilitate the involvement of the scientific community in science communication: 1) a formally recognized practice and 2) one involving a third party for organizing the science communication. The first category was substantiated by a respondent:

"Lack of formal recognition, in my opinion, is among fundamental hindrances, if science communication were a formally recognized practice, this definitely would be a facilitating factor."

However, the question of how to introduce this as a formal practice remains open. There were also opposing opinions from respondents, e.g., indicating that science communication should be monitored by the Ministry of Education and Science in Latvia.

"In the absence of good will there must be control, and in the case of Latvia, there is no scientists' good will to communicate with the society. Maybe that is not because of lack of willingness but rather because of lack of understanding of such a necessity. For example, upon electing in the position of associate professor, assistant professor, or researcher, the criteria assessment form should include a criterion that the outcome of applicant's research should be discussed not only among specialists but also in public."

Another aspect resulting from this argument was the raising of awareness regarding the importance of science communication and the stakeholders involved. The average and long-term science planning documents of Latvia do not define the goals of science communication where no educational activities of the scientific community are possible. On the one hand, it is important to acknowledge that, above all, it is necessary to develop an understanding of science communication opportunities for doctoral students who are prospective members of the scientific community. On the other hand, there was the opinion that motivation for the involvement in science communication was not required for the entire scientific community, for example: "This would be excessive. There must be some evaluation, and probably we should highlight issues which are truly outstanding and unique". Another respondent added that instead of serving the purpose of motivation, it is rather a reminder:

"For the scientists to remind that in the absence of involvement in science communication no funding for future or new research will be available. The public must be informed about research. No additional motivation, for example, in the form of specific funding, etc. is necessary. This is an obligation, and no stimulus is required accordingly."

In pursuing science promotion, the duty prescribed under the Law on Scientific Activity of Latvia, Article 6, defines general responsibilities of a scientist in Paragraphs 2 and 3 referring to science communication (indicating a one-way communication approach), without public involvement in the creation of new knowledge.

The second category, identifying the participation of a third party in the organization of science communication, was substantiated by respondents' opinions about educating scientists on the role and goals of science communication and involvement of communication specialists. According to responses to this category, there is a need to involve a third party acting as an intermediary among the scientists and society in general. One respondent noted:

"The larger the gap between public knowledge and that of the scientific community, the smaller the public willingness to support science funding using public taxes. Science communication should facilitate the willingness to obtain education. Scientists are involved in educating the society; perhaps, this is also the only way for ensuring funding for science. At the same time, there must be an audience for such a communication – the society requires critical thinking."

Concerning involvement of a third party in organizing science communication, the respondents highlighted the problem of Latvia's scientists having an adverse experience, e.g., occasionally experiencing low standards of journalism with communication media. It should be noted that organizing science communication and being involved in such, or both, requires additional time; as recognized by one of the respondents: "Communication is a joint effort. It is not a one-person show. It requires extra time for both stakeholders: the scientist and the media representative to reach an understanding." One possible incentive for compensating the time devoted to science communication, as indicated in Survey of Factors Affecting Science Communication by Scientists and Engineers (The Royal Society, Research Councils UK, & Wellcome Trust, 2006, p. 17), is to fund the organization of science communication. However, salary is not always a qualifying factor for the scientific community with the raising of scientific reputation possibly more important.

Conclusion

As a result of this study, it is concluded that, in the case of Latvia, the factors that would facilitate the involvement of the scientific community in science communication overall, are a formally recognized and appreciated approach. The assessment distinguished differing positions: starting with the concept of public communication of research outcomes using a selection process to one of communicating all research outcomes to the public where such research was publicly funded. It is emphasized that the level of interactivity needs to be taken into account when assessing the model of science communication. Furthermore, it is recommended that science communication involve a third party to facilitate the awareness of the scientific community about their responsibilities to the rest of society. Nevertheless, it is important for the institutions overseeing science in Latvia to agree upon and communicate to the scientific community the definition and strategic goals of science communication.

Acknowledgements

The Paper was supported by the National Research Program 5.2. EKOSOC-LV

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