

The Role of Micro Communities in Educational Research

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Abstract: This paper describes how several factors including the increasing fragmentation and specialization of knowledge, the highly contextualized nature of research, especially in the social sciences, and the increased ability to communicate and publish in non-traditional ways are changing the traditional view of research community. In response to these factors, we propose moving to a Micro Research Community (MRC) model. The advantages and disadvantages of the MRC model are discussed as is a method for determining MRC membership and establishing MRCs.

Introduction

The production and dissemination of high quality research are vital to the growth and development of any field. Research communities play an essential role in fostering high quality research. A research community is defined as a formal or informal group of scholars who are researching similar questions and whose work influences the overall direction and understanding of the community. Current well known research communities include those related to cancer research, global climate change, nanotechnology, string theory, and cybersecurity, among many others. The traditional view of a research community is that of a large, well defined, knowledgeable, and identifiable group of scholars working more or less collaboratively, possessing a common paradigm, and disseminating their work through traditional channels such as refereed journals and professional conferences.

While notable examples of research communities operating under the traditional view still can be found, the research community concept is undergoing a change. This change has been brought about by increasing fragmentation and specialization of knowledge, the highly contextualized nature of research, especially in the social sciences, an increased ability to communicate and publish in non-traditional ways, and the changing nature of academic and non-academic research positions. The result of this change is that large profession-wide research communities with broadly shared research agendas, commonly applied methodologies, stable and agreed upon dissemination channels, and shared paradigms are becoming less prevalent, especially in the social sciences.

Micro Research Communities

The increasing fragmentation and specialization of knowledge is particularly notable within educational research. For example, the American Education Research Association is comprised of 12 divisions and over 150 Special Interest Groups (SIGs). These SIGs are focused on research on wide ranging topics from, for example, Peace Education to Semiotics in Education to Large Scale Assessment. Even within these highly specialized research areas, one is likely to find numerous sub-specialties. Using three as a very conservative estimate of the number of likely sub-specialties within each AERA SIG, it can be hypothesized that there are close to 500 areas of research related to education that have at least some meaningful ongoing scholarly activity. As another example, the annual Society for Information Technology in Teacher Education (SITE) conference, an organization already with a fairly narrowly defined scope, listed 28 possible themes for proposals for their most recent annual conference. This trend toward hyper-specialization in educational research, while understandable and not without merit, has profound impacts on the ability to broadly generalize research findings and the degree to which research can be thought to inform the practice and theoretical development of other researchers outside the hyper-specialized area.

In order to account for the current realities of research in education, we believe there is a need for a new conceptual model of research communities. The traditional idea that a research community is a large, stable, well defined body of researchers is no longer viable. Research in education is today, for the most part, a process in which research is conducted in relative isolation, disconnected from larger themes, mostly published in small niche journals, read by few, if any, other researchers, and actually informing the day-to-day work of few practitioners.

In order to address some of the current issues with research in the field of education, we propose the use of a micro research community model. Micro Research Communities (MRCs) are defined by a small number of researchers, ongoing direct communication between community members (often facilitated by new modes of communication), shared resources and collaborative research activities, highly focused research questions, community negotiated, often non-traditional, dissemination outlets, and shared paradigms. In particular, the concept of “micro paradigms” is central to the MRC concept. Kuhn’s (1972) concept of a paradigm is most commonly seen as referring to large, profession wide, or even societal, paradigms that are rare in social sciences and education in particular. However, micro paradigms are essential to MRCs. The fundamental goal of an MRC, in our model, is to develop a shared understanding of a key question related to the community’s specific area of interest. Such a micro paradigm will lead to the development of both theoretical and practical developments by the community. We also believe abandoning the notion of a paradigm as a macro-level construct, while perhaps not in keeping with Kuhn’s thinking on the topic, offers researchers a liberating and useful opportunity to redefine and refocus their own research in concert with other members of their micro community.

Advantages of Micro Communities

Micro research communities offer several advantages over the current research community model. The first advantage is that MRCs represent more authentic and contextualized versions of actual practice. In reality, much research being conducted in education today is being shared with a very small group of researchers and practitioners. The second advantage is that they place emphasis on specific, focused problems and research questions. Large scale, sweeping, broadly defined research questions have been difficult to address given the highly contextualized and local nature of many educational problems. A third advantage of MRCs is that they place greater emphasis on direct interpersonal peer-to-peer communication. This results in a more immediate and meaningful impact of the findings of one member of the community on the research and practice of other members. A fourth advantage of MRCs is that they make practical small scale but meaningful outcomes more likely. Without the artificial need to generalize findings across broad contexts, MRCs can focus their research on those specific questions which are likely to produce theoretical and practical results in context.

Disadvantages of Micro Communities

There are also several possible disadvantages of micro research communities. One disadvantage is that MRCs may lead to increased insularity. Disconnecting from the larger research community and interacting with a smaller group might prove too limiting and rather than fostering deeper discussion could lead to isolation and disabled learning and growth. Another disadvantage is that they may focus on questions outside the mainstream of a field – making it more difficult to publish in top tier journals or secure external funding. A third potential disadvantage is that MRCs have the potential for interpersonal conflict or becoming dominated by a single individual. A fourth disadvantage is that they may be difficult to develop and sustain.

Method for Determining De facto Micro Research Communities

In our conceptualization, there are two types of micro communities. The first type is comprised of existing de facto, naturally occurring MRCs. The second type are purposely structured MRCs. De facto micro communities of researchers are likely a fairly common, if hard to identify, entity. While there are a number of methods for determining a research community (e.g., Scholl, 2009; Flake, Lawrence, & Giles, 2000; Sclano & Velardi, 2007), it is our plan to identify MRC membership through a process of citation analysis. We are interested in determining membership in the de facto micro research community focused on studying diffusion of innovations within the field of instructional design. To do this, we are using a 3 step process.

The first step, which has been completed, was to determine a list of “core papers” on the topic. To do this, we used Google Scholar to search for the most commonly cited papers containing the phrases “instructional design” and “diffusion of innovations” for the years 1982 to 2002. This generated an extensive list of publications and the number of times each has been cited since they were initially published. We went through this list and eliminated any articles that may have contained the phrases but were not specifically related to the diffusion of innovations and instructional design. We then included any publication that had been cited 50 or more times, resulting in a list of 20 articles. We will refer to these articles as “Core Papers (or Core Sources)” of the research community.

The second step, which we are currently in the process of completing, is to conduct a citation analysis of the 20 core papers to determine if there are pre-1982 citations common to a majority of the core papers. If there are common citations, these would be classified as “Seminal Papers (or Seminal Sources)” of the research community.

The third step will be to search for articles published since 2002 that cite a number of Core Papers and Seminal Papers from the research community. We will call these “Current Papers (or Current Sources)” of the research community. Figure 1 is a graphic depicting a possible relationship between Core, Seminal, and Current papers. The authors of the “Current Papers” are, in effect, the current members of the diffusion of innovation in instructional design micro research community.

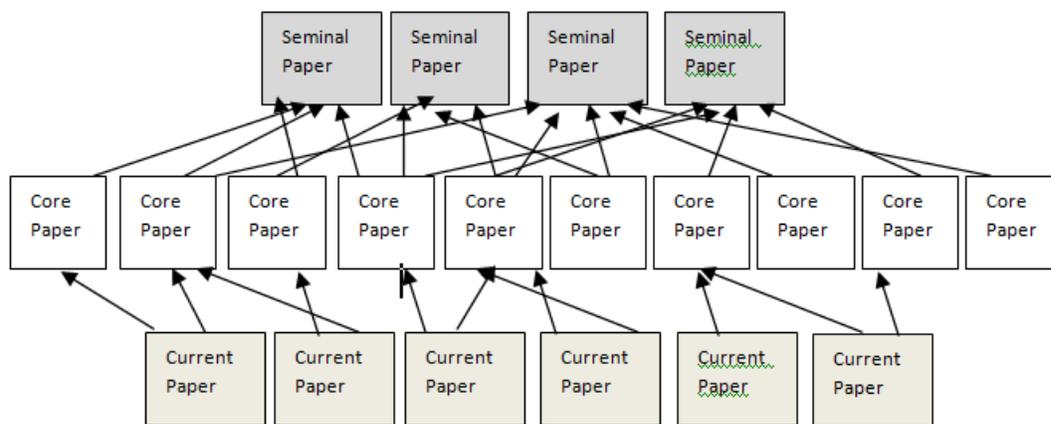


Figure 1. An example of a possible relationship between seminal papers, core papers, and current papers.

The method we are using to determine membership in MRCs is citation based. Other possible ways to determine membership may include looking at conference participation, asking researchers to identify other leading researchers working on related topics (using a type of snowball sampling), or studying communication patterns from social media sites such as Twitter, Academia.edu, Facebook, and LinkedIn.

Developing Purposefully Structured Research Communities

The ultimate goal of our research is to create a purposefully structured research community related to our area of research interest. This process will take several steps. Once we have identified the current members of the MRC, the next step would be to contact the members of the community, explain how they were identified, and describe their contributions to the MRC. The next step would be to develop a shared resource such as a website, blog, data management / citation tool, or mailing list to facilitate communication and the sharing of resources. The next step would be to establish ongoing micro-conferences, either virtual or physical conferences, to foster a more in depth discussion of issues related to the MRC.

Ultimately, the MRC should come to fundamental agreements about the shared direction of the MRC and create a micro paradigm about key questions related to their topic. The specific steps in the process of developing a purposefully structured micro research community, sustaining the community, developing micro paradigms, establishing specific research goals, and developing dissemination outlets is yet to be determined but will be vital to the future of the MRC concept.

Conclusion

As research in education continues to become more specialized and contextualized, the traditional role of research communities will need to be modified and updated. While there will, of course, always be certain research areas that are widely influential and heavily populated, most research topics in education will continue to occupy relatively small niches within the overall research community. These smaller niche areas, while not widely known or heavily researched, still have the potential to make key theoretical advances and contribute to educational practice in important ways. We believe the most efficient way to facilitate these theoretical advances and practical contributions is to identify and foster Micro Research Communities.

References

- Flake, G. W., Lawrence, S., & Giles, C. L. (2000). *Efficient identification of web communities*. Princeton, NJ: NEC Research Institute
- Kuhn, T. (1972). *The structure of scientific revolutions* (2nd Ed.). Chicago: Chicago University Press.
- Scholl, H. J. (2009). Profiling the EG research community and its core, in M.A. Wimmer et al. (Eds.), *Lecture Notes in Computer Science, 2009, Volume 5693*, pp. 1–12, DOI: 10.1007/978-3-642-03516-6_1
- Sclano, F., & Velardi, P. (2007, October). TermExtractor: a Web Application to Learn the Common Terminology of Interest Groups and Research Communities. Paper presented at Conférence TIA-2007, Sophia Antipolis