

# Action Research: organising a virtual conference on science education justice and inclusion

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## Abstract

Action Research is usually concerned with formal teaching and teachers, in schools and universities. In this case, the practitioner is a science education researcher engaged in Science Education for Social Justice. It is an account of organising and implementing a virtual conference on Inclusion within this theme. It is also about broadening our understanding of Action Research to include the work of science education researchers. Naturally, very little has already been written about the role of science education conference organisers, or about conferences on science education for social justice. Nevertheless, in the spirit of opening up a distinctly new avenue for research, and one that is directly relevant to teachers of the sciences and teacher educators in the sciences, this paper is offered for consideration.

1. The research question was: what are the characteristics and challenges of organising a conference on Science for Global Justice: Inclusion?
2. The experiment was designed to include both the theme for papers and the process of running the conference.
3. Data in the form of the first paper for the conference (available at [iosteflipped.wikispaces.com](http://iosteflipped.wikispaces.com)) contained the literature research on the benefits and challenges of organising a virtual conference on Inclusion and to be Inclusive, in Science Education Research. The first paper also contained a convenor's commentary on the process.

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## Introduction

Action Research (AR) is usually concerned with formal teaching and teachers, in schools and universities. Much of the activity is focused on school teachers working with children in their schools to improve their learning (e.g. Hine, 2013). There is an increasing number of teacher educators engaging in AR for personal development as well as to improve their teaching of teachers, although there is some indication that this is not seen as valuable as other forms of research (e.g. Cochrane-Smith, 2005). In this case, the practitioner (and author) is a science education researcher engaged in Science Education for Social Justice. It is an account of organising and implementing a virtual conference on Inclusion within this theme. It is also about broadening our understanding of Action Research to include the work of science education researchers. Naturally, very little has already been written about the role of science education conference organisers, or about conferences on science education for social justice. Nevertheless, in the spirit of opening up a distinctly new avenue for research, and one that is directly relevant to teachers of the sciences and teacher educators in the sciences, this paper is offered for consideration.

## Research question

The research question was: what are the characteristics and challenges of organising a conference on Science for Global Justice: Inclusion?

## Method and data collection

The experiment was designed to include both the theme for papers and the process of running the conference.

1. A quantitative method was used.
2. Data in the form of the first paper for the conference (available at [iosteflipped.wikispaces.com](http://iosteflipped.wikispaces.com)) contained the literature research on the benefits and challenges of organising a virtual conference on Inclusion and to be Inclusive, in Science Education Research. The first paper also contained a convenor's commentary on the process.
3. Reflections on each paper were compiled live, by the author and by those 'attending' the virtual conference as delegates. These reflections are also available on the web site.
4. The reflections constituted a form of qualitative analysis, subjected to scrutiny by the individual paper authors and by other delegates to promote validity. These reflections and further comments are on the conference website.

## Data

1. A total of 12 full papers in pdf, placed in advance on a purpose-designed website, collected by personal persuasion and personal writing, formed the conference base.

2. The website also enabled discussion pages, blogs, and commentaries in a variety of forms, text, diagrams, short videos, audio files, to be uploaded. In the event, only text files were used.
3. The website also collected data relating to page viewings, and on countries of origins.
4. The final data consisted of theoretical reflection on each paper by the convenor.

## Analysis

1. Successes included:
  - a. a conference of significant size in terms of paper numbers;
  - b. viewings of papers up to around 100, a good audience for a science education research conference;
  - c. insightful contributions from a variety of viewers.
2. Not so successful were:
  - a. the range of papers on Inclusion;
  - b. the total audience which remained modest.
3. In the light of comments and reflections, a second virtual conference to include face to face elements (a so-called hybrid conference), and better publicity, is being planned.

The first paper, on the website provided above, provides a more elaborated account of the process than can be given here.

## Conclusions

So, what were the science education issues that came to the fore in this activity?

1. The conference aimed to give opportunities for more extended discussion and reflection than is possible with traditional conferences. Traditionally, in conferences, immediate questions are solicited, within a time frame measured in a few minutes. Additionally, the traditional format means that the material has just been presented and heard for the first time, requiring great powers of concentration and the capacity to process deep arguments very quickly. In this conference, the flipped nature, with the papers in advance and plenty of time to read and re-read, supported construction of highly reflective commentaries. Also, the traditional format constrains delegates to ask simple questions, often mechanical in my experience (were the sessions all in the afternoons?), but the conference incorporated extended commentaries, indicating that extended thinking had taken place. The asynchronous nature of the discussions also meant that colleagues in different time zones, or only available at certain times when their professional programmes permitted, could be included in the discussions without prejudice to their circumstances.

2. The format of the conference meant that the data on contributions, including statistics of viewing, were automatically collected. It was also made available to all in the spirit of Inclusion, since the website is open to all.
3. I was also able to judge the popularity of each paper, through the viewing statistics, and through the numbers of comments. Often, in traditional conferences, popularity may be skewed by a famous speaker presenting in parallel. In this conference, everyone could 'attend' each paper, so that there was no conflict in choosing who to attend. I suppose this means that every presenter can be seen as a keynote speaker, with everyone in the room! What I was not able to judge was why each paper was different in popularity.
4. Since the conference is significantly innovative in science education research, it proved to be a hard sell to prospective attendees. They would ask questions about where it was, its timing, could they miss a bit, and did they have to contribute. We are so used to traditional meetings that anything out of the normal is too easily seen as too hard to understand. Now that we have one example, perhaps advertising and publicity will become that much easier, as we will see in the next version. Related to this is the notion of face to face, and I am planning in the next cycle to integrate some local face to face events (research lunches and dinners, for example) to see how that goes.
5. My philosophy is to place more power in the hands of the conference participants. Often, strands are already chosen by the organisers, but in the next one I intend the strands to emerge naturally from the topics of the papers themselves. Of course, there has to be some structure, but I aim to make this minimal.
6. This time, I was not able to widen the locality of delegates significantly, although one was from India. I will incorporate changes into the advertising schedule to deal with this.
7. Unusually, the papers and discussions are still open to viewing, and commentary, some time after the formal closing date. This provides an extension to the traditional format.
8. The papers are available for downloading. I will need to pay special attention to copyright issues in future conferences.
9. Overall, I count this as Action Research, since it is part of a cycle of activity, to be undertaken over a few years.
10. My knowledge claim is that alternative provision of virtual conferences in science education research has the potential to widen participation.

## References

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