

Keynote Speech 1

As Mixed Methods Expands from the Social Sciences to the Health Sciences

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Introduction

As a social scientist and trained as a social scientist, I often speak to health science groups. And so how can I understand the health science approach as beginning to emerge to mixed methods research. To gain greater acceptance, I need to actually build on a health science ideas when I talk about social science. And I am going to talk about five ways that I can bridge from a social science perspective as I move into health sciences. And this is especially personal and important for me because I've just changed jobs. I've gone from the social sciences in Nebraska and in about a week or two, I'll be starting my new job in the health sciences in family medicine at the University of Michigan. You see the symbols are up here, Michigan, Nebraska. So I'm going from social sciences to the health sciences.

And mixed methods is going all around the world right now. It's not just taking a western idea and applying it to Thailand or Japan. We need to think about the way to make our use of mixed methods culturally sensitive, sensitive to the cultures. So, as mixed methods comes from the western world essentially, of England and the United States and Australia and gets adopted by Japan. And in the health sciences how does it need to change? So, I'm going to use a concept that we call scaffolding, in other words as I talk with you in Japan about your use of mixed methods research, I need to build on your cultural understanding of how to do mixed methods research.

As I work with health science researchers, I need to build on their health science perspective. And what we are doing with writers in this mixed methods field is beginning to explore what's some of these differences are. How do we in the social sciences take mixed methods knowledge and apply it to the health sciences? How does it need to change? How does our initial thinking need to change?

What is mixed methods research?

Okay, let's start with "What is mixed methods research?" Here is my definition of mixed methods research. In the research study, what we do is we collect quantitative and qualitative data in response to questions. Some people would say we collect numbers and stories, but I think it goes a little deeper than that. We actually collect close ended information and open ended information. Mixed methods is more than that. We collect both forms of data in a very rigorous way, systematic way. And here is the most important part. We begin putting the two databases together. Do you know how to do that? A mathematician in South Africa said mixed methods is two hands coming together. And Dr. Fetters has come up with the idea that mixed methods is one plus one equals three, in other words, when you start putting these databases together, you have more information, new information than keeping the two separate.

And then what we have done is we come up with designs for how to actually conduct mixed methods study. And there are different types of designs out there. And our whole idea is that quantitative and qualitative coming together will have more value. And that will add to new insights, more information, clarifications, expansions of ideas. So this very simple idea putting quantitative and qualitative together has led to a whole way of doing research. And what is developed over the last 10 to 15 years are the techniques, approaches for doing this form of research.

Once we know that we need to do a mixed methods study and we have a type of design it then opens up such issues as how do you write a title for a project, how do you develop a type of design, what would a diagram of the design look like, how do you treat validity issues, how do you display the information jointly, how do you write up a mixed methods study, how do you write a good study aim, how do you write a good question, even how you use theory. So my way of thinking about mixed methods is first you have a reason for doing mixed methods and the design, it helps direct you towards all these other ways of doing mixed methods research.

A full methodology has developed and we are still developing ideas, still adding to our list of these parts of mixed methods research. So are you finding this hard? That's good. It's a field that's developing, you are learning, you are thinking about a

new way of doing research. If you are to do mixed methods, you are doing the latest research methodology that has been developed in the world. And people all across around the world are beginning to learn it, learn about it. I was in China with Dr. Fetters in March. Last summer we were in Vietnam with Dr. Harnish. The summer before I was in Thailand. It's certainly in Australia. It's a methodology that I think all of you can use.

Five ways to shape mixed methods research

a. Diagram

So I'm going to talk about five ways that we are beginning to shape mixed methods from the social science idea that are originally started with and moving now into the health sciences. And as just I go through these points, you will see some of the new innovations that are beginning to be discussed worldwide about mixed methods research.

The first one is, we have these diagrams in the social sciences for how to draw and think about picturing our mixed methods studies diagrams. But we need to start adopting what we have developed in the social sciences as we start working in the health sciences. In the health sciences, I think the diagrams are more process oriented. In the mixed methods social science area, they are more methods oriented and somehow we need to end up with something that's a combination of the two. Let me show you some examples of this.

So this table was included in a document, the best practices in mixed methods in the health sciences⁵⁾. And in this table, the researchers identify the strategy, the sample, the goal, and analysis. Otherwise when you are laying out a project, it's useful to have a table like this in your study. This is a project looking at the Sierra Leone in Africa in the health sciences and they have a diagram of the different steps in this project and how they flow, but if you start looking at this, they started with what I call "content". You know, not only were the males and females involved here, but these were war affected youth that were interviewed and they want to investigate trends. So in other words, it's not just a methods box, it's more of a content box.

5) National Institute of Health, Office of Behavioral and Social Sciences Research (2011)

Box 2. Table of Strategy, Sample, Goals, and Analysis

Strategy	Sample	Goal	Analysis
Structured, standardized interviews	Stratified random sample (based on depressive symptoms) of older adult patients from non-academic primary care settings	Assess depressive symptom patterns and correlates	Multivariate regression models
Semi-structured interviews	Purposive: 50 African American and 50 white adults from Spectrum sample (who may or may not be depressed)	Identify an explanatory model for depression	Grounded theory
Free listing and pile sorts	First 25 African American and 25 white adults selected above for semi-structured interviews for free listing. Second 25 African American and 25 white adults selected above for pile sorts	Identify the domain of depression and its characteristics	Cultural consensus analysis
Ethnographic discourse-centered analysis	Purposive: Another 15 African American and 15 white adults who are depressed based on survey responses from the Spectrum sample	Identify social meaning of depression	Discourse analysis

Gallo, J.J. (2003-2007). The sociocultural context of depression in late life. Research grants funded by the National Institute of Mental Health (R01MH67077, R01MH62210, and R01MH62210-01S1).

Source: NIH/OBSSR (2011). *Best practices in mixed methods in the health sciences*. Washington, DC: NIH.

Now contrast this with the way we've been drawing diagrams for mixed methods designs, this is a very popular one in the States, by Ivancova. Basically what she did was she did a survey, she started with a survey, analyze the data, came up with some cases and then did some qualitative data collection and quantitative data analysis here. And the actual integration, in other words where these two databases came together, the integration, I say where the qualitative bumps up against the quantitative was done right here in the middle when they developed the cases. But look at the words that are used here. Quantitative data collection, quantitative data analysis. So this is a very methods oriented picture.

So what I'm recommending is in a table like this from the health sciences, there needs to be another row added right here that speaks to integration. Because the social scientists are very interested in where those bump up against each other, so we add integration to this. We are going to have more complete picture. This type of table is very different than that diagram I showed from the social sciences. So social scientists working in the health sciences need to be aware of how the diagram might be configured in the health sciences.

b. Writing study aims

Writing study aims for a project. Social scientists need to think about how study

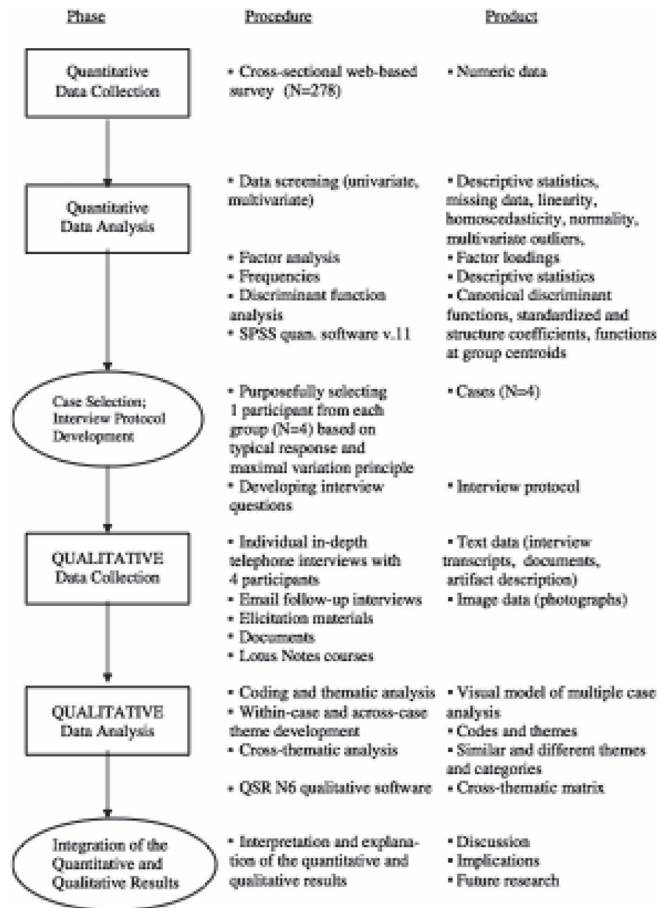


FIG. 1. Visual model for mixed methods sequential explanatory design procedures.

Source: Ivankova & Stick (2007)

aims are being written in the health sciences. Basically in the health sciences, we are not seeing mixed methods questions. And when you see the study aims, they're quantitative and qualitative. So I'll take a project of Harvard that I've been a part of, it's a study here looking at the health disparities among 3 refugee groups. Somali Bantus, Bhutanese, and the Somali majorities. So they are looking at how these different communities build family strength in cohesion between children and parents. So they wrote these aims for their project.

The first one is just to get to know these communities, the practical aim. The second one is really a quantitative aim. What's the impact of a family home visitation intervention on parent-child relationships. Can you see that as a quantitative study aim? And then they wrote this aim looking at what were the barriers / facilitators to

establishing this close relationship at home. What are they missing? There is no mixed methods question. The whole idea of mixed methods is to bring these two databases together, isn't it? And there is no indication of the methods in this, so going back to the best guidelines for how to do a mixed methods study from this project, the best practices, there is actually recommendation that there will be a quantitative question or study aim, qualitative study aim and the mixed methods study aim to be added to a mixed methods project. In other words, if the whole idea of mixed methods is to bring the two together, we need a study aim that addresses that. And this is a new type of questions, so what I did was I worked with them to add a mixed methods study aim question here. And that reads "How does the outcomes of the family home visitation intervention with information about barriers / facilitators through the community, through the interviews, compare with the intervention looking at the factors that influence family strength?" In other words, I'm trying to build a qualitative and quantitative component together in a new type of question called mixed methods question. So as social scientists we often see mixed methods questions. And I think now bringing that and working with the health science community to come up with those questions is important.

c. Skills that people bring to mixed methods research

We've also been curious as social scientists about the skills that people bring to mixed methods research in the health sciences. And the skills that are brought differ culturally. In South Africa, there is a very big emphasis on qualitative research, so most of them are very skilled in qualitative. In Thailand, there is a major emphasis on quantitative research, so there is not much in terms of skill development in qualitative research. In China, there is an emphasis on quantitative research, and not much of an emphasis on qualitative research.

And you know, when you look at health sciences researchers, they are very interested in doing experimental trials, and so in the United States, we have for example this guideline, the CONSORT⁶⁾ guideline on how to actually set up a good rigorous experiment. But what's happening is that some of the health science

6) A guideline put forth by *Annals of Internal Medicine* regarding how to conduct experimental trials.

researchers in the United States are beginning now to develop webinars and Podcast and various video lectures on how to do qualitative research. So this is Lesley Curry at Yale University that right now has developed a whole series of qualitative modules aimed at those people in health sciences to help build their skills.

So as social scientists we need to be aware of what skills are being brought in, and typically when I go into some of the countries that are very quantitative in their orientation, like I think Japan is, because you senior scientists are often trained in more quantitative methods than qualitative. So I'll start a workshop beginning with a basic education about how to do good qualitative research. In order to do mixed methods, you need to have both quantitative and qualitative skills that are brought forward.

d. Writing mixed methods articles

When writing our articles, we need to be thinking about how to write good mixed methods projects in health sciences. And there's been some writings in the health sciences on how to put together these articles. We know in the health sciences that the journals require short articles. We also know that often the methods are put up on websites beyond the print publication. We know that sometimes there is a very distinct structure of how to write an article in the health sciences.

The *Journal of Mixed Methods Research*, I think it's fair to say, started out of the social sciences. Because I was one of the coeditors of the first issue of that. In fact, I was out of education and social sciences and my coeditor was out of social psychology. So what did we do? We created the opportunity for very long articles. Now this is the journal that Dr. Fetters is currently the editor of. You can submit an article to this journal, that's 12,000 words. That's about 30-35 pages long. Contrast that with the type of length that we often see in the health sciences, 3000 words, 6000 words. So we in the social sciences have to begin thinking about how are we going to develop a much shorter, more concise mixed methods project.

So I taught a master class at Harvard in the school of public health. And they were raising this question. They saw that our social science articles were very long and how could we come up with shorter ones. So we began a conversation about how you can divide a mixed methods project into multiple papers. And what I did was I got 3 articles that all dealt with mammogram screening in the country of Chile, South

America. And what these researchers did was they published a qualitative article in one journal, now this is from one study, one mixed methods study. A quantitative article in another journal and then mixed methods integrative article in a third journal. So they divided it up. And they did what we call “Cross walking”, they referenced one study to the other studies, so you can see this was a part of an overall project.

And then we asked ourselves if you are going to shorten, down to a short 3000-, 6000-word article for the health sciences, what did they do in this article to shorten the quantitative and qualitative parts? You can read about that in this short book. Did I tell you this was 20 dollars only? So coming up with creative ways to divide this up. Now in America, we need to publish if we are going to do research. So you could say this. One advantage of doing mixed methods is that you can issue multiple papers from it. In fact, there is a fourth paper you can write, what we call a methodology paper on how to do mixed methods, and submit that to Dr. Fetters’s journal and he will be available right after the presentation to talk with you about your study. But think about getting four papers from one project and divide it up that way.

e. A team approach to mixed methods research

Now social scientists tend to work more independently as individuals and in the health sciences I saw that there were a lot of teams doing mixed methods studies, more team research. So that thinking of a social scientist needs to move from a solo social scientist to more of a team. And when we developed these best practices guidelines for the health sciences, I was really curious about the discussion among our group about all the different ways teams could be formed in doing a health science project. So rather than working as independent silos, we are going to form a team. And then I asked my class at Harvard what skills do they have in mixed methods. And what they felt they had was experience survey on mixed methods research teams, in other words, many the health science people were working on teams and they needed to know “How do you form a good mixed methods team where there is a strong leadership, where there is people that have different viewpoints about how to do research”. So as social scientists, we need to begin thinking about team research much more as we start working in the health sciences.

Recommendations

So here's some recommendations for where this might all go. First of all we need more books on mixed methods in the health sciences, short books. The medical doctors I work with cannot read my 400 page book on mixed methods research, they just don't have the time. And often they are coming from, they are great nursing researchers, they are great social work researchers, they are great family medicine researchers, but we need those books that are fairly short that can get them right into the mixed methods research.

Then we need more training for health science researchers. So one of the major projects I am working on now is a funded project in the United States, it is being led by a colleague at Johns Hopkins University and it involves Harvard, and right now we are in a process of training 50 health science researchers in the mixed methods in the United States and over the next four years we will have those 50 people trained. So training is emerging in mixed methods research in the health sciences. We need to continue to understand how social science thinking needs to adopt and change when it goes into the health sciences and also some of the people in the health sciences need to begin trying out some of the social science ideas, about diagrams, about mixed methods study aims, about how you start with the design and then it moves into all these other aspects of research methods. And we need to continue to build on our innovations.

And so what's going to happen in the health sciences is there will be emerging new ways of mixed methods research that those of us in the social sciences had not thought about. As mixed methods emerges more and more in Japan, you will be coming up with culturally specific ways of doing mixed methods in this country. And those of us that are from other countries need to pay attention and start looking closely at how you are making mixed methods your own. That's what I have to say to you today. And I hope you start looking at some of the books and reading some of the articles about mixed methods. We are doing a lot of training in the United States, there will be a workshop next month or in November at the University of Michigan. There are workshops before and after all the major mixed methods conferences, and I hope to see you there.

Thank you very much.

References

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Dr. Hisako Kakai :

Thank you, Dr. Creswell. I didn't have a chance to introduce Dr. Creswell as I was supposed to earlier. Dr. Creswell was a founding coeditor of the *Journal of Mixed Methods Research*, which was first published in 2007, and he is the first president of the Mixed Methods International Research Association, or MMIRA for short. In Japan, two books written by him have been translated into Japanese and published. So many of you in Japan probably know him well.

The next lecture will be given by Dr. Pat Bazeley from the University of New South Wales in Australia. Dr. Bazeley is the current president of the MMIRA, Mixed Methods International Research Association, and she is well-versed in the computer assisted data analysis, such as using NVivo, with many years of experiences and in-depth expertise in the field. Please welcome Dr. Bazeley.

Dr. Pat Bazeley :

Thank you. Let me just introduce things by saying you will find that I have some quite different opinions from Professor Creswell. And I hope not to confuse you but perhaps to challenge you to think through things for yourself.