

Want to solve complex health issues? Train scholars to think across disciplines

26 February 2018, by Sharon Fonn



When people work together and learn about each other's research methods, great things can happen. Credit: Shutterstock

In this complex world a number of factors affect both the distribution and prevalence of disease and the effectiveness of interventions to prevent or reduce disease. These factors are social, physical, environmental and historical. It follows, then, that challenges in public health require a multidisciplinary approach.

This means that if researchers want to make an impact on public health they can't just have a thorough grounding in their own discipline. They also need to be literate in other research approaches and methods. Knowledge generated from various theories of learning suggest alternative insights and interventions that may be effective in making this a reality.

Various programmes have been developed to help scholars engage in multidisciplinary research. One of them is the [Consortium for Advanced Research Training in Africa](#) (CARTA). The aim of the programme is to build a critical mass of effective researchers to improve health outcomes in sub-

Saharan Africa. And, since there's [a scarcity](#) of African-led [public health](#) research, it's also working to develop researchers with cross-disciplinary competencies. Once their training is done, these scientists should be capable of heading multidisciplinary research teams.

The programme is focused on scholars in sub-Saharan Africa. But the model has international relevance. Globally, there are major health challenges that need to be addressed by innovative research. The approach developed under CARTA could be adapted to other contexts and would prepare Ph.D. candidates to address complex health problems in different countries and geographies.

Teaching differently

The consortium brings together nine African universities, four African research centres and a number of partners from the global North. Since 2011, a cohort of new Ph.D. students have joined the programme each year making a total of 165. They have all received structured, supplementary training over a three-year period. This supplements the Ph.D. training they're receiving at their home universities, which is almost always discipline-specific. The programmes' focus, on the other hand, is multidisciplinary.

One of the key parts of their training is a series of joint advanced seminars. There are four of these for each cohort, and they're residential; the fellows gather in different countries and locations for four weeks at a time. The seminars promote knowledge sharing and they also provide a supportive network of researchers within and between cohorts.

One of the most important elements of the seminars is how they're taught. Many [sub-Saharan universities](#) are poorly funded and classes are huge, especially at undergraduate level. This means that didactic teaching is often the norm: the

lecturer is the "sage on a stage" who talks without letting students engage.

By contrast, the seminars use participatory and experiential learning. Teaching sessions are informal, inviting critique and robust discussion. They challenge hierarchy – for example junior lecturers are encouraged to debate professors. Value is measured by the coherence of an argument or the robustness of evidence, not on the status of the person making the point. This encourages fellows to use evidence and theory to defend their argument; it reinforces that there is no hierarchy between disciplines.

CARTA's approach to teaching also shows how a [multidisciplinary approach](#) can work in practice. For example, sessions can be co-facilitated by an epidemiologist and an anthropologist.

A valuable experience

So, is all of this working? To provide some answers, [data has been drawn](#) on from across the cohorts. The fellows were asked questions about their experiences and learning.

The evidence suggests that the seminars, and the broader programme, is bearing fruit. Ph.D. students who have attended the programme show that they are able to think and work across disciplines.

Some have made changes to their research question, choice of literature, study design and analysis plan. One, from the second cohort, wrote, "I never thought of how law could influence healthcare provision for the aged, especially in terms of access to postreproductive care services. ... I am trying to expand my research ... in this direction. "

Another wrote that after the second seminar "I joined the social science network at my home institution and I actively participate with the hope to learn and acquire more skills in qualitative research".

Three fellows also reported that they were using mixed methods in research outside of their Ph.D. studies: "Training on mixed methods has influenced

me. I applied for a local institution competitive grant using mixed methods approach to explore noise pollution in a teaching hospital. I won the grant and I have already completed the qualitative aspect of the study – my first attempt at qualitative research."

Fellows also reported that they'd found ways to communicate better to a wider range of disciplinary colleagues.

Some unanswered questions

There are gaps in the data. A way to assess whether each Ph.D. fellow gained sufficient breadth and depth has not yet been found. There is confidence that the Ph.D. fellows can engage meaningfully across disciplines, but it has not assessed whether multidisciplinary training makes for a better statistician or social scientist.

It is also unknown if the ability to work across disciplines or maintain anti-hierarchical values will be sustained. The world of science, government, funding agencies, universities and research institutions is largely still structured around scholarly disciplines. Most institutions remain conservative when it comes to hierarchy, so fellows may find it hard to sustain anti-hierarchical approaches.

And longer-term follow up to assess the impact of the programme on the production of research evidence and its impact will need to be done.

Still, the process evaluation suggests the path is the right one. And there is no reason that other organisations or institutions can't adopt and adapt the model for their own contexts.

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