Invited Article

The double helix of extension services and area-based research

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From a scholar's point of view, the conduct of so-called area-based research is chiefly concerned with two things: defining the problem according to the local needs, and coming up with a research methodology to solve the problem, with perhaps a participatory process thrown in to increase chances of adoption.Only new discovery is regarded in this process as legitimate "scholarly work", and counted as a researcher's as well as a university's contribution to scholarship. However, the use of existing knowledge to solve developmental problems is categorized under "extension services", which is viewed as a secondary, and optional, duty of a university.

But in a developing country where the use of existing knowledge or extension services is an important role of a regional university,this view is too narrow and unproductive.In fact, it has been shown in many a case study that,to be able to identify and conduct relevant research to serve the local need effectively, a solid foundation in extension services is required.

From the point of view of the local user, it is even clearer that there is little need to differentiate between the use of existing knowledge and new discovery to solve a problem. The essential thing is that the problem is solved efficiently, effectively, and scientifically; whether it is called research or extension services is irrelevant to the user. More relevant attributes would be the cost, the speed, and the quality and refinement of the solution, all of which weigh much in favour of the extension services rather than research.

However, many parties involved, such as funding agencies, quality assurance agencies, and the higher education regulatory office itself, continue to focus on "research" only, and regard extension services as a separate (and second-grade) part of a university's performance, to be conducted through a separate channel, and usually counted only as an income-generating activity without regard to its quality or impact on the region.

In this article, therefore, the author argues that "scholarly work" of a (regional) university must include both extension services and research, and for effective output, the two need to be intertwined into a "double helix", and managed strategically together by the university.

The double helix of university extension services and area-based research

The idea of extension services as a part of a university's mission in regional development is not

new. In the Morrill Act of 1862, in which the U.S. government provided federal land to help establish colleges in each state of the Union, it was stipulated that such colleges should provide education in agriculture and the mechanic arts to "the industrial classes" (instead of providing classics study for the elites, as was traditional in those days).This Act was followed by the Smith-Lever Act of 1914, which established"a system of cooperative extension services, connected to the land-grant universities, in order to inform people about current developments in agriculture, home economics, public policy/government, leadership, ...".

In other words, this new type of university had two main missions in modern-day area-base terminology : *increasing the region's human capital (teaching the children of common people), and knowledge transfer* (working with the state to provide extension services). No mention was made about the discovery of new knowledge *(research).*

To do extension services means working on the ground, absorbing the local priorities, concerns, and world views, among others, to make sense of the problem, the information available, and the people involved. Only then can one propose a useful solution and try to act on it.It is like doing piling work before constructing a building on soft grounds, so that the building rests through the piles on solid bedrock underneath. The extension services in this case serve as the piles, or a force-transfer mechanism between research and the real-world situation. However, to be linked with research, the extension services shouldbe "curiosity-driven", that is, trying many different solutions, even though one solution might already have solved the problem.

The author therefore proposes three stages of the "extension services - research double helix", as follow,

Stage 1 : "good" extension services, i.e., delivering a good solution to solve an existing problem,within the quality, time, and cost constraints of the user, using existing knowledge mainly from a single discipline either locally available or transferred from elsewhere,

Stage 2 :"innovative" extension services, i.e., introducing knowledge and solutions from other disciplines to increase the values and innovativeness of the solution,

Stage 3 : in-depth research in a specific discipline, to produce new discoveries in that field.

A good result in stage 3 can be achieved only with on-the-ground experiences gained in stages 1 and 2, which will enable a researcher to see a niche problem, among many others, and come up with a niche solution. This is not unlike an ability to find a niche position in business. If one can do this, one will find many exciting possibilities, but it requires observation, imagination, and persistence.

The three stages described above form the basis for the role of a university in regional development. It is said that effective development requires three abilities: art, science, and craft. Art is necessary to produce imaginative solutions, so that one is not trapped in an old way of doing things. Science is needed for data gathering, analysis, planning and methodical execution, while craft--or skills derived from experience--is required to ground the work within the context of reality. It is this third element which is usually missing from many so-called area-based research projects. Craft is knowing what data are valid, which partners are reliable, which problems should be tackled, and when is the best time to do so. These can be obtained through extension services. Without craft, all the data may have no practical meaning, partners could prove false, solutions could be misguided, and the expected results and impact never realized.

University in regional development

In an OECD review of the role of higher

education in cities and regions, Christopherson (2011) observed that there are two models in which universities are involved in regional development. The first is the science-driven model,where innovation is first created in the university, then transferred to businesses. In this model, the place of innovation and the place of utilization can be far apart, and the means by which innovation is transferred to the user is intellectual property (IP), through the buying and selling of patents, licensing, and the like. The advantage of this model is that there are possibilities of quantum leaps in technology, which will move the entire industry to a higher plane. However, this can happen in a faraway place, with little benefit to the region where the university is situated. This model is widely practiced in the U.S.

The second modelis the business network model, whereby the university works continually with regional industry, exchanging information and solving problems together, including students, academic staff, and industry personnel, resulting in many incremental innovations, which is circulated and used within the local business network.The benefits fall within the region, and both the university and the industry prosper together. This is mainly what most regions in a developing country need. The weak point, however, is that the chance of coming up with an entirely new technology is low. This model has long been practiced in Europe, for example in the north of Italy.

A Thai university should therefore review and decide which model, or what mix of the two models, would be best in engaging itself in regional development. The decision will have implications onthe necessary internal restructuring of the university, allocation of resources, as well as the results expected by the stakeholders.

Internal restructuring of the university for regional development

To be able to do both extension services and research in an integrated manner effectively, there is a need to develop hardware, software, and peopleware in a university, such as

- Recognizing that both extension services and area-based research are equally important and intertwined university missions, which should appear on the university's strategic plan, annual work plan, and budget,
- Putting extension services and area-based research under the same umbrella, with the same supervisor,
- Counting both extension services and area-based research as performance indicators for personnel and departments,
- Developing guidelines for quality of the extension services- research combination,
- Providing platforms for exchange of experiences and recruiting of young scholars into the field.

In addition, the university should view this work not as a revenue-generating activity, which may distort its goals and objectives, but as an opportunity for public service, for exposing students to real-world work, and for the university to become a genuine stakeholder in the region.Only in this way would a university be able to fulfill its multiple missions.

Recognition at the national level

It is encouraging to note that,in an announcement made in October 2013, the Thai Office of Higher Education Commission (OHEC) recognized combined extension services - area-based research work(or "socially-engaged scholarship" as they call it) as acceptable scholarly evidences for academic rank promotion, right up to the level of full professorship. The criteria for quality of such work are as follow:

- Description of the situation which exists before commencement of the work
- The method used and the involvement of the target groups

●The process which leads to changes in the situation

●The knowledge and expertise used in creating changes

●Anticipation of the consequences of such changes

●Assessment of the outcomes of changes

●Proposed ways for continuation and sustainability

These seven criteria clearly focus on the application of knowledge (extension and research), rather than new discoveryof knowledge (research). Although some further developments are still needed, such as a new list of reviewers, guidelines for researchers, and KPIs for universities, the announcementis a breakthrough in Thai higher education.

Conclusion

A new research ecosystem is emerging in Thailand's higher education scene.The concept of a double helix of extension services plus research is becoming an acceptable model for university engagement with society. It focuses on application, changes, results and impact of the use of knowledge. It involves the user as a co-producer of knowledge, and takes into account the local conditions necessary to ensure the success of utilization. At the same time, it is recognized as legitimate scholarship.This development should lead to more effective roles for universities in regional development, and serve as a powerful stimulus for area-based research in Thailand in the years to come.

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Reference

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