Working Paper 3/2014

RESEARCH-INTEGRATED LEARNING: A DISTINCT POSSIBILITY

Choon-Seng Lim, Vincent
and
Seow Yun Yee[1]

March 2014

---

1. Senior Economist (cslim@seacen.org) and Senior Manager (yunyee@seacen.org) of the Research and Learning Contents Department and Communications Unit, The SEACEN Centre, respectively. The views expressed in this paper are the authors' and do not reflect those of The SEACEN Centre

Working Paper 3/2014
**RESEARCH-INTEGRATED LEARNING:
A DISTINCT POSSIBILITY**

Published by The South East Asian Central Banks (SEACEN)
Research and Training Centre
Level 5, Sasana Kijang
Bank Negara Malaysia
No. 2, Jalan Dato' Onn
50480 Kuala Lumpur
Malaysia

Tel. No.: (603) 9195 1888
Fax No.: (603) 9195 1802 / 1803
Website: www.seacen.org

Printed in Malaysia by Graphic Stationers Sdn. Bhd.

Table of Contents

Abstract

Can a research and training institute excel in both research (R) and training (T) by crafting a "synergistic relationship" to produce what Aristotle would say "the whole is greater than the sum of its parts"? Interest in integrating research (R) and training (T) took a leap frog with the ending of the binary divide - the differentiation between polytechnic institutions and universities - in Australia (1987) and the UK (1992) (Hughes, 2004). As much as the realization of the importance to integrate research and training to enrich the process of learning by incorporating current research of staff into the learning curriculum, in reality, for higher/adult learning, empirical research on the relationship between teaching and research is rather difficult to conduct as data is not easily derived. As such, for R-T integration to be successful, it must incorporate the human activity system and provide opportunities to incorporate management skills, leadership, self-development and organization learning. It is also vital to create an atmosphere for the relationship to flourish: a live interaction between learners and researchers so that both parties will benefit from the sharing of information and knowledge. In short, it is all about first putting people in the right and conducive environment.

Keywords: Research and Training Linkages, Knowledge Transfer, Integration Models

JEL Classification: A12, A20, I21, I23

RESEARCH-INTEGRATED LEARNING: A DISTINCT POSSIBILITY

1. Introduction

Can a research and training institute excel in both research (R) and training (T) by crafting a "synergistic relationship" to produce what Aristotle would say "the whole is greater than the sum of its parts"? Interest in integrating research (R) and training (T) took a leap frog with the ending of the binary divide - the differentiation between polytechnic institutions and universities- in Australia (1987) and the UK (1992) (Hughes, 2004). Before that, research was almost exclusively conducted in universities while the purpose of polytechnic schools was set up not to do research but to train. As research and training are viewed as two different "animals", the rationale conclusion is that integration of the two disciplines in the same institution would involve to some extent, "trade-offs" – sacrificing one quality in return of gaining another. The question to pose therefore is whether this R-T relationship should be "honed" and "enhanced" for institutions offering both research and training, and if so, how does one go about doing it?

2. The Relationship

The relationship, a complex one at best, has been extensively studied (Baker et al. 1998). As noted by Clark (1997, cited in Robertson and Bond, 2005, p.509), a strong relation between research and teaching defines the feature of a modern university and of academic identity. Teachers who are engaged in research are "likely to enhance teachers' knowledge, interest in and enthusiasm for the subject" (Brew & Boud, 1995, p. 264). Obviously, what is being taught today is based on someone's research or publications (Brown, 2005). Learners appreciate that they are taught by researchers ((Brown 2005). In institutes of higher learning, the National Committee (UK) of Inquiry into Higher Education (Dearing,1997) Report notes that

We believe that this form of scholarly investigation, together with research, is a distinctive feature of higher education: they enliven staff, they ensure that teaching and curriculum development is up-to-date, and, more generally, they invigorate higher level learning in our universities and colleges.

The R-T linkage can be classified into 4 categories (see Healey, 2005, p.70):

1. Research-led learning, where the curriculum is structured around teaching current subject content.
2. Research-tutored (curriculum emphasizes learning focused on students writing and discussing essays and papers).
3. Research-based (curriculum emphasizes students undertaking inquiry-based learning).
4. Research-oriented (curriculum emphasizes teaching processes of knowledge construction in the subject).

Research-led and research-tutored emphasize on research content while research-based and research-oriented stress research processes and problems. For the purpose of this discussion, the R-T integration implies research-led learning.

3. Benefits of the R-T Relationship

Elton (2001, p. 47) has noted the R-T relationship is bidirectional and dialetic. Good research causes good teaching and good teaching causes good research and they mutually reinforce and support each other. Looking at learning perspectives, Zetter (2002, cited in Jenkins and Zetter, p. 5) notes that the benefits of integrating teaching and research can be viewed as follows:

1. Experientially - a process which can be beneficial to students (participants) and staff(researcher);
2. Conceptually - in terms of member needs and the optimal transfer of knowledge; and,

3. Operationally - how teaching and research can complement one other as learning activities.

Aiming to create a generic model on linking R & T, Senaratne et al. (2004) conducted a case study on the School of Construction and Property Management (SCPM) at the University of Salford, U.K. They note that the benefits included academic rigour, creating market differentiation, raising standards, keeping ahead of change and complying with the mission statement. Researchers felt that the opportunity to present their work to a different audience might trigger new insights into their research. Learners, on the flip side of the coin, were happy to be the immediate party who benefited from such a link.

4. The Quintessential Prerequisites: Knowledge Transfer and Scholarship

The integration of research with training with the input of research outcomes into teaching can be regarded as a knowledge transfer process (Davenport and Prusak, 1998). However, it is not merely the transmission but more than that, the absorption and the usage following the transmission is the more important concern. Therefore, "simply initiating the R & T link and feeding research knowledge into teaching or training is not good enough as the transfer would also need to be viewed from the end-users point of view – how the knowledge is absorbed and used by the learner. One argument is that successful implementation of the teaching-research nexus needs to pay due attention to 'student [participants] experiences and course designs and also focus on policy and practice of departmental organizations' (Jenkins and Zetter, 2003). This is well summarized by Jenkins (2000, p.375):

> *"there can be productive relationships between staff research and teaching, if teaching and research are conceptualized in ways that enable them to be effectively linked, and if staff research is 'managed' to benefit student learning."*

However, this transfer of knowledge is not easy to achieve (Szulanski, 2000). It was pointed out that firstly, the connection between

the researcher and students (participants) can play a part in affecting the effectiveness of the transfer. This is particularly true in the setting of an institution of higher learning. Secondly, the direct transfer of research findings to students (participants) can be inappropriate if, for example, the research findings are either too abstract, too complex or incompatible with the syllabus. One obvious way to bypass this difficulty is by repackaging the research output to suit the learners. The uses of case studies, repackaged from research projects/studies to suit the requirements of learners and the syllabus is an example of getting around this difficulty.

Szulanski (2000) also pointed out that the research outcomes may need to be filtered for the successful transfer of research knowledge into teaching (training). This filtering obviously would need to consider the context of the training-learning objectives such as desired outcome of training, the target audience, syllabus and the like. It was also pointed out that motivation, both of teaching staff and learners, is an influencing factor during knowledge transfer. Staff must see the value of this transfer in knowledge and learners must equally find value add in the gaining knowledge, especially if it is new and cutting edge knowledge from research outcomes. The dissemination therefore depends on usefulness to the user and the absorptive capacity of the users (Huberman, 2002). According to Sexton and Barrett (2004), knowledge transfer can also be viewed as the movement of knowledge via some channel from one individual or firm to another. In this context, this means movement of research knowledge (be it research findings, skills or processes) from researchers (be they academics, researchers or practitioners) can be transmitted to learners through various modes such as teaching and other mediums as seminars, workshops, conferences and project-based work.

It is important to note that the R-T relationship may be moderated by an intervening variable such as scholarship (Boyer, 1987). Scholarship can be classified as (Boyer, 1987 cited in Elton 2001, p. 48):

1. Discovery: the creation of new knowledge;
2. Integration (the synthesis of knowledge);

3. Application and practice (the application of knowledge); and,
4. Teaching (the transmission of knowledge).

Boyer (1990) defines discovery as the contribution to the "stock of human knowledge" (p.17). Integration as "giving meaning to isolated facts, putting them in perspective" (p.18), application as "knowledge…responsibly applied to consequential problem" (p. 21) and "teaching as not only transmitting knowledge but transforming and extending it as well" (p. 24). Boyer further concludes that the four intellectual elements of the scholarship are inseparable. Boyer's argument is that instead on just focusing on the research-teaching nexus, one should instead concentrate on whether scholarship exists in all aspects of research and academic work (Trigwell et al., 2000). Organisations, in an effort to deliver high quality teaching and high quality research can easily lose sight of the scholarship (Hughes, 2004).

5. Research and Training Institutions (RTIs): The Way Forward

In many RTIs, the activities are often analogous to that of a typical university. For instance, a typical RTI conducts training courses (analogous to courses conducted by the university) for the participants (analogous to students in a university). The resource persons perform similar functions as lecturers in a university. As noted by Clark (1997, cited in Robertson & Bond, 2005, p. 509), a strong relation between research and teaching defines the feature of a modern university and of academic identity. It is, therefore, for a RTI to tap the rich resources of the research department and vice-versa to enhance the learning activities of a RTI. The problem would, therefore, be to find ways to improve this linkage. This is similar to the teaching/research nexus mentioned above. It is noted that models have to be explicably developed by introducing strategies to create a beneficial relationship between the two areas (see Senaratne et al., 2004; Linking Research & Teaching, Online 1 and LINK: Good Practice Resource Database, Online 2; Fawcett el al., 2003; Cech, 2003). For instance, for an institution, there is an explicit need to state it in the mission and strategic plans (Prosser, 2005).

In general, the proposed changes that look into converting a RTI into a research-informed teaching institute (RITI) could take into consideration the following:

1. Creating a responsive centre that caters to the needs of its stakeholders;
2. Conducting effective training informed by current research scholarship; and,
3. Developing and training and recruiting staff with a strong commitment to teaching informed by research.

Hence the strategies to integration as suggested by Senaratne et al. (2003) are 3-pronged, classified into: (i) general strategies, (ii) T to R strategies and (iii) R to T strategies. These strategies must be consistent in terms of support and resources (both physical and human), changing policies, valuing teaching to align both teaching and research activities and changing recruitment policies, for both teaching (training) based and research-based departments. Senaratne et al. (2003), however, emphasize that it is the R to T transfer that enhances student (participant) learning process rather than the T to R transfer. Therefore, to enable R-T transfer, three processes are identified as necessary (Senaratne et al., 2004). Firstly, it is important to review current research and teaching policies as the first step in creating the R&T link. Secondly, having identified the importance of using research staff in teaching, the second activity considered under the 'enabling processes' is a review of research staff recruitments periodically. Thirdly is the improvement of the learning environment and leveraging of IT facilities to create platforms for communities of practice to link learners and researchers to strengthen relationships and create a shared space for interaction.

Hence they are at least two possible integration models. These are:

1. Adopting a less 'controversial' approach of integration by reorganizing and sharing of human and other resources of two departments, while still maintaining the integrity of the respective departments. This is consistent with the transitional change to link R and T at the departmental level and,

2. Merging the two departments of research and training into one single unit (transformation shift) to be headed by a single Head. The transformation requires that learning and research to be horizontally managed as one group.

In both cases, this would entail establishing a strong faculty of experts who are involved in the design and delivery of learning and research programmes. These faculty members should be able to lead in both and to provide forward looking views for learning and research. This would strengthen capability in curriculum development and research, radically transforming the organization. However, one caveat is that there may be potential conflict between the staff of the research and training departments should the functions of these two departments merge. One has to examine the willingness and capacity of key role players, in particular model (1) above where there is tension created between the department heads and staff. Staffs of both departments in the pre-merger setting are specialists in their own fields and therefore may feel apprehensive regarding the possibility of closer cooperation. It may be easier for staff of one department to be able to adapt better to the new setting e.g., a staff who has both training and research experience may be able to adapt better. One also has to deal with the distribution of responsibilities between the two departments. However, to extract maximum benefits and not to defeat the purpose of the merger, existing and key staff after the post-merger, should excel in both disciplines so that there is no implicit divide.

6. The SEACEN Experience

At the outset, SEACEN has realised the importance of linking research and training to enhance participants' learning experiences of its learning programmes, much like its member central banks (please see Appendix 1 on initiatives of SEACEN member central banks to link research to training). In SEACEN, research activities continue to be strategically linked to learning (training) with a view to enhancing the effectiveness of its learning programmes as mapped out in its strategic business plans. SEACEN has set up cross-functional teams to identify topics on research and case studies which can be utilized in its learning programmes.

Research staff of SEACEN is also involved in the designing and delivery of selected learning programmes. In addition, it has also refined roles of its visiting research economists (VREs) from member central banks to include providing assistance in the design and development of learning programmes, as well as serving as speakers or facilitators in relevant learning programmes and research workshops, in addition to conducting research projects and developing case studies for SEACEN learning programmes.

One of the critical processes in managing learning needs of member banks is the annual learning need survey conducted by SEACEN in identifying the knowledge and skills requirements of member banks in preparation for proposing the learning solutions. The input from member banks is critical to consolidating both the learning and research needs, mapped to the SEACEN's knowledge blocks of macroeconomic and monetary policy management (MMPM), financial stability and banking supervision (FSS), payment and settlement systems (PSS) and leadership and central bank governance (LDG). This mapping of research and learning needs of its members has enabled SEACEN to propose learning programmes and research activities to meet the business needs of the member banks in a more structured manner.

7. Final Remarks

As much as the realization of the importance to integrate research and training to enrich the process of learning by incorporating current research of staff into the learning curriculum, in reality, for higher/ adult learning, empirical research on the relationship between teaching and research is, however, rather difficult to conduct (Thomas and Harris, 2001). Firstly, there are difficulties to measure and assess the quality of teaching. Even if these measurements are clearly defined and available, there is the question of reliability as different groups of targeted audience may result in different assessments of the teaching quality. Secondly, it is difficult to measure the direction statistically. Thirdly, the relationship depends on the way teaching is delivered – communication skills matters. Therefore, the activities associated with the transfer of research into learning are comparatively difficult and hence form part of a long-term process (Senaratne et al., 2003). Taking

cue from the soft systems methodology, it is important to realize that for the R-T integration to be successful, it must incorporate the human activity system and provide opportunities to incorporate management skills, leadership, self-development and organization learning. It is also vital to create an atmosphere for the relationship to flourish: a live interaction between learners and researchers so that both parties will benefit from the sharing of information and knowledge. In short, it is all about first putting people in the right and conducive environment.

References

Baker H. E. III; H. Bates; V. Garbacik-Kopman and J. McEldowney, (1998), "A Preliminary Investigation into the Correlation Between Teaching and Research in the Florida State University System," *Management Research News*, Vol 21 (9), pp. 1- 9.

Boyer, E. L., (1990), Scholarship Reconsidered: Priorities of the Professoriate. Princeton, New Jersey: Princeton University Press, The Carnegie Foundation for the Advancement of Teaching, 147, Available at: https://depts.washington.edu/gs630/Spring/Boyer.pdf

Brew, A., (2006), Research and Teaching: Beyond the Divide, Basingstoke UK: Palgrave Macmillan Palgrave.

Brew, A. and D. Boud, (1995), "Teaching and Research: Establishing the Vital Link with Learning," *Higher Education,* 29, pp. 261–273.

Brown B. R., (2005), "Why Link Personal Research and Teaching?" *Education + Training*, Vol. 47, No. 6.

Cech, T. R., (2003), "Rebalancing Teaching and Research," *Editorial in SCIENCE*, Vol. 299, (10), pp. 165.

Davenport, T. H. and L. Prusak, (1998), Working Knowledge: How Organizations Manage What They Know, Harvard Business School Press, Boston.

Elton, L., (2001), "Research and Teaching: Conditions for a Positive Link," *Teaching in Higher Education*, Vol. 6, No. 1, 2001, pp. 43-56.

Fawcett, J., C. Aber and M. Weiss, (2003), "Teaching, Practice and Research: An Integrative Approach Benefiting Students and Faculty," *Journal of Professional Nursing*, Vol 19 (1), pp. 17-21.

Healey, M., (2005), "Linking Research and Teaching: Disciplinary Spaces," in R. Barnett (Ed.), *Reshaping the University: New Relationships between Research, Scholarship and Teaching*, pp 30-42, Maidenhead: McGraw-Hill/Open University Press.

Huberman, A. M., (2002), "Moving Towards the Inevitable: the Sharing of Research in Education," *Teachers and Teaching*, Vol. 8 (3/4), pp. 257-268.

Hughes M., (2004), "The Relationships Between Research and Teaching in Higher Education - A Review of the Literature (1990-2002)," *Occasional Paper,* No 2.

Jenkins A. and M. Healey, (2005) Institutional Strategies to Link Teaching and Research, York: The Higher Education Academy.

Jenkins, A. and R. Zetter, (2003), "Linking Research and Teaching in Departments," *Learning and Teaching Support Network (LTSN*), Available at: www.itsn.ac.uk/genericcentric

Jenkins, A., (2000), "The Relationship Between Teaching and Research: Where Does Geography Stand and Deliver?" *Journal of Geography in Higher Education,* Vol. 24, No. 3, pp. 325-351.

Roberston, J. and C. Bond, (2005), "The Research/Teaching Relation: A View From the 'Edge'," *Higher Education,* Vol. 50, pp. 509–535.

SEACEN, (2013), Questionnaire Responses of Member Central Banks to Learning Needs Analysis (LNA) Survey.

Senaratne, S.; R.D.G. Amaratunga; M. Kagioglou; D. Baldry; Ghassan Aouad and A. Bowden, (2004), "Transfer of Research Knowledge into Teaching in the UK Higher Education Institutions," University of Salford, U.K., The National Committee of Inquiry into Higher Education (Dearing), (1997), Report, Students and Learnings, Section 8.7, Chapter 8, Available at: http://www.leeds.ac.uk/educol/ncihe/nr_114.htm.

Sexton, M. and P. Barrett, (2004), "The Role of Technology Transfer in Innovation Within Small Construction Firms," *Engineering, Construction and Architectural Management,* 11(5), pp. 342-348.

Szulanski, G., (2000), "The Process of Knowledge Transfer: The Diachronic Analysis Of Stickiness," *Organizational Behavior and Human Decision Processes,* Vol. 82 (1), pp. 9-27.

The National Committee of Inquiry into Higher Education (Dearing), (1997), Report, Students and Learnings, Section 8.7 Chapter 8, Available at: http://www.leeds.ac.uk/educol/ncihe/nr_114.htm.

Thomas R. and V. Harris, (2001), "Exploring Connections between Teaching and Research in Hospitality Management," *International Journal of Hospitality Management*, Vol. 20.

Trigwell K.; E. Martin; J. Benjamin and M. Prosser, (2000), "Scholarship of Teaching: A Model," Available at: http://www.clt.uts.edu.au/Scholarship/A.Model.html.

Appendix 1

Linking of Research and Training in SEACEN Member Central Banks

In a survey[2] conducted by SEACEN on the linkage between research and training at SEACEN member central banks, it was interesting to note that while most central banks concur with the importance of linking research and training, very few institutions make deliberate attempts to directly link research to training and vice-versa. However, many central banks share research findings at training events, internal seminars and workshops while researchers are requested to be resource speakers at specific relevant training events. Research findings or output are also disseminated widely via reports, publications, intranet, knowledge sharing sessions, training courses/seminars/ workshops and websites. One central bank leverages on video-conferencing for internal staff under knowledge dissemination initiatives.

The summary of the survey is as follows:

- At the People's Bank of China (PBC), researchers from the PBC Research Bureau and PBC Research Institute are invited to lecture at PBC training courses or workshops on topics which are closely related to their research work.
- In Reserve Bank of India, some faculty members for its training establishment are selected from research departments. Also depending on the need analysis for specific projects, the research officers are deputed for specialised training to augment their resource requirements.
- In the Bank of Korea, research provides feedback for the prioritization and selection of training topics as well as facilitators for the related training topics.
- In the Bank of the Lao PDR, there are plans to invite researchers from other research institutions and central banks to provide training

2. Learning Needs Analysis Survey conducted in 2013.

on core central banking areas of macroeconomic model and financial programming, specifically related to data analysis, forecasting and planning.

- In Bank Negara Malaysia (BNM), while there is no direct linkage between research and training, there are, however, indirect initiatives by way of appointing department representatives as resource speakers at various internal training programmes conducted by BNM. In this way, knowledge and research work of the resource speakers are indirectly transferred to the participants of the relevant training programmes. In addition, research work conducted is also shared via the lodgment of the relevant materials in a dedicated database.
- At Nepal Rastra Bank, there are a few mechanisms of transferring knowledge garnered from research work into training. NRB has been organizing a "Knowledge Sharing" programme to transfer knowledge and experiences garnered from research work. Likewise, researchers are invited to be resource persons in the related training programmes where research findings are shared. However, the reverse is not true as training staff are generally not involved in research work.
- In Bangko Sentral ng Pilipinas (BSP), Echo Seminars are held to share knowledge garnered from training courses among colleagues and staff. Brownbag sessions, which are lecture series, open to BSP employees, are held to present in layman terms, current issues and results of research studies.
- In the Central Bank of Sri Lanka (CBSL), the knowledge gathered from research work is used in providing information to the training institute, i.e., Centre for Banking Studies. The knowledge of researches would be used to design and deliver training programmes to officers of the central bank and officers in the banking and financial sector. The CBSL conducts training programmes using the research output. Training opportunities are also provided for officers to improve the research function of CBSL.
- In Central Bank, Chinese Taipei (CBCT), relevant and useful research output is shared among staff. Research and training in

the CBCT work hand in hand to enhance knowledge sharing. The CBCT's Personnel Office keeps track of the progress of research projects and coordinates with other departments to hold seminars on research outcomes.

- In Bank of Thailand, there is some knowledge transfer from research work to BOT's internal technical skill training. From time to time sessions for knowledge sharing are held, including seminars, training courses, workshops and database for knowledge management among staff in the organization. Some of BOT's researchers are actively involved in internal training programmes. New research findings can therefore be incorporated into the training. Occasionally after research work is completed, a sharing session for certain research work is introduced for interested parties, depending on the research topic and relevance to the parties concerned.
- In the State Bank of Vietnam, potential experts/specialists in specific areas are appointed to the research taskforce and identified as core training staff.