GERMANY/HONG KONG JOINT RESEARCH SCHEME
THE PROJECT REPORT
(for Project Completion)

Project Number: G_HK035/12

Title

Learning Process-Oriented Thinking via e-Learning Systems

Particulars

	Hong Kong team	German team
Name of Project Co-ordinator (with title)	Dr. Minhong Wang	Prof. Dr. Jürgen Moormann
Name of Co-Investigator (if any)	Nil	Dr. Michael Leyer
Institution or Institutional affiliation	[ ] CityU [x] HKU [ ] CUHK [ ] HKUST [ ] HKBU [ ] LU [ ] HKIEd [ ] PolyU	[x] Frankfurt School of Finance & Management [ ] Others:
Other project team members (if any)	Ms. Bei Yuan	Ms Stefanie Steeg

Justification:
The name of the Germany research student is different from the one shown in the proposal because of some change made by the Germany side.

Funding Period

	1st year	2nd year (if applicable)
Start Date	1.1.2013	1.1.2014
Completion Date	31.12.2013	31.12.2014

Objective(s) as per original application

Aims of the project

1. Examine whether e-learning is useful for learning process-oriented thinking in comparison to other traditional learning methods.
2. Investigate how e-learning systems should be designed for learning process oriented thinking in a best possible way.

Details of Report [Please attach relevant document(s)]

i) Outline of proposed research and results obtained

Achieving efficiency is a main success factor for companies and other organizations. A major facilitator for higher efficiency of an organization is the orientation towards business processes. Compared with traditional function-based organizations, process-oriented organizations are expected to be faster in delivering output, more adaptable to changes in the market, more responsive to the needs of customers and superior in terms of quality. However, although the advantages of process orientation are well acknowledged in the literature, most companies felt it difficult to achieve the transformation.

To support learning for a fundamental change such as process-oriented thinking, relevant methods have been investigated in the literature. These studies aimed at enabling people to learn tacit knowledge through personal exchange, learning-by-doing, and use of explicit knowledge. There are no empirical studies yet examining the learning methods and their effectiveness in a process management context, except Leyer & Wollersheim, which provides empirical evidence that learning by doing is generally more effective than by using documented knowledge.

This research was conducted using a two-step approach consisting of *experiments* and a *case study*. The experiments were designed to investigate whether e-learning is useful for learning process-oriented thinking in comparison to other learning methods (the first research objective). A prototype of e-learning system for learning process-oriented thinking was conceptualized and implemented. Relevant learning resources (e.g., lectures, references, cases studies and exercises) and online learning activities (e.g., simulations, discussion forums, digital portfolios and online assessment) were provided and arranged at the e-learning system. 60 learners including practitioners and Master students were randomly assigned to two groups: 1) the e-learning group using the prototype e-learning system, and 2) the control group using traditional learning methods including documents, personal exchange and relevant practice. The

experiments included 3-month's learning, data collections before and after the learning period, and improvement of the e-learning system based on learners' feedback. Pre- and post-tests were used to assess the learning output on process oriented thinking. Survey and interviews were used to collect learners' perceptions on cognitive, affective, and social aspects of the learning environment and learning experiences, and their suggestions to improve the learning system. The e-learning group was also interviewed regarding their perception on the effectiveness and impact of the e-learning program on supporting their learning of process-oriented thinking.

The second research objective was examined by means of a case study within a representative middle-sized bank in Germany (Westerwald Bank eG, Hachenburg). Here it was difficult to attract a partner for experimental research since the risk is considered high from the viewpoint of a bank. Based on our results (Learning effect is higher in classroom setting than in e-learning) we decided to focus on training in seminar style. Although the usage of an e-learning system was not possible we could derive interesting results which – in turn – can be used also for further development of e-learning systems).

The analysis was conducted based on Donald Kirkpatrick's model, which allows in-depth analysis and evaluation of training programs. The analysis was based on survey and interviews with employees, business managers, and training managers of the bank. The results achieved were also discussed with the bank.

ii) Significance of research results

The findings of the project are of high practical relevance and value to the industry, in addition to theories of e-learning in the organizational context. The results can be directly transferred to many service institutions to foster their transformation from service companies towards process-oriented organizations.

iii) Research output

Leyer, M./Wang, M./Moormann, J. (2014), How should we teach the logic of BPM? Comparing e-learning and face-to-face setting in situated learning, in: Proceedings of the Australasian Conference on Information Systems (ACIS 2014), Auckland, New Zealand, No. 151

Leyer, M./Wang, M./Moormann, J. (2014), Is learning-by-doing via E-learning helpful to gain generic process knowledge?, in: Seidl, T./Hassani, M./Beecks, C. (Hrsg.), Proceedings of the LWA 2014 Workshops: KDML, IR and FGWM, Universität Aachen, Aachen, S. 276 (Resubmission)

Leyer, M./Wang, M./Moormann, J. (2014), Is learning-by-doing via E-learning helpful to gain generic process knowledge?, in: Sampson, D.G., Spector, J.M./Chen, N.-S., Huang, R., Kinshuk, K. (Hrsg.), Proceedings of the 14th IEEE International Conference on Advanced Learning Technologies (ICALT 2014), IEEE Computer Society, Piscataway, NJ, S. 711-713

Leyer, M./Wang, M./Yuan, B./Moormann, J. (to be submitted), E-learning or classroom? Effects of experiential learning within business process management education, Internet and Higher Education

iv) Potential for or impact on further research collaboration

The international collaboration between researchers and students from Hong Kong and Germany in this project is very helpful for exchanging ideas, facilitating insights into different cultures, and promoting further research collaboration. The co-PIs of the project will discuss the plan for further research and collaboration based on the findings of this project.