

Effects of International Exchange Programs on Subject Specific Competences: Investigation of the Exchange Program Between the Medical School of Jimma University (Ethiopia) and the Ludwig-Maximilians University (Munich)

Jacobs Fabian

LMU, Department of Surgery Downtown, Munich, Germany

Stegmann Karsten
Fischer Frank

*LMU, Department of Psychology, Munich, Germany
Ludwig-Maximilians-University, Nußbaumstr. 20, 80336 Munich, Germany*

Siebeck Matthias

LMU, Department of Surgery Downtown, Munich, Germany

Abstract *To meet the requirements of the increasing globalization in the field of health care, international exchange programs have to be more effective and their influences on the participants must be explored in a more detailed way. Based on the socio-cultural learning theories of Vygotsky, the medical exchange program between Jimma University in Ethiopia and Ludwig-Maximilians University in Munich has been investigated. The list of competences of the Tuning Project for health professionals and the self-assessments of participants to influence their course of education formed the basis for this study. In five qualitative interviews, the participants estimated their competence high in the field of doctor-patient relationships and in the area of specialized communication. It could be shown that it is necessary to use open qualitative Questions to find out which gains participants of this exchange program have, in regard to subject specific competencies. In terms of the influence on educational careers, the research could show that rather single participants reported a change in their educational careers through the experience during the exchange program. Overall, this study could declare positive effects on international exchange programs on their participants.*

Keywords: *education; socio-cultural learning; medicin; clinical competence; international cooperation; internationalisation; exchange programs*

Introduction

University exchange programs and networks have higher significance in the context of globalization as well as information society. Currently it is unclear, whether the objectives of exchange programs, like qualification and international university networking (DAAD, 2008) have an effect on professional competences, because the design of former studies has been focusing rather on methodical aspects than on theoretical principles (Palthe, 2004 as well as Thomas, Chang, & Abt, 2007, p. 283).

The research concerning exchange programs, especially in the area of medical training, has recently become more important and there is a diverse discussion about the impact of exchange programs (Balandin, Lincoln, Sen. Wilkins & Trembath, 2007 p. 786; Mc Allister, Whiteford, Hill, Thomas & Fitzgerald, 2006, p. 367). This is a result of the increasing implementation of exchange programs in the curriculae of the universities. In this case Drain and colleagues (2009) advocate additional increases in international exchange programs as well as in their funding (Drain, Holmes, Skeff, Hall & Gradner, 2009, p. 320).

The evaluation of exchange programs demonstrates different influences on their participants. In regard to competence training, softskills and job specific competence are promoted (McAllister, Whiteford, Hill,

Thomas & Fitzgerald, 2006, p. 369). Professional careers are influenced especially through job specific competence. Moreover, a specific training location (learning culture) influences and decides what will be learned (Wertsch, 1985, p. 67; Zurcher, 2007, p. 71). Based on this assumption the question rises up which influences a specific training location in the field of medicine has on the participants of exchange programs.

A closer examination of the existing research documents show that many of the studies and their results are based on a narrow research project. Most of the time, the influence of exchange programs on individuals who travel from an industrial country to a developing country, is examined without searching about the mechanism of this impact.

There is a lack of research about the question why there should be an impact through different "learning cultures" on individuals. The present research wants to verify this topics.

Theoretical Framework

At the theoretical level this research has investigated the question, to what extent considerations on social and cultural learning can provide a useful approach to explain learning processes and if they can be extended to contexts of exchange programs.

This requires not only the critical consideration of the educational content offered in these programs, but it must also analyze and evaluate the occurring learning processes. This analysis must be done on a scientifically-founded theoretical basis. So far there are only a limited number of studies that meet exactly this claim. The present work is trying to make a contribution to fill this gap.

The learning theory view of Vygotsky, with his socio-cultural approach is providing a theoretical basis for this study. Vygotsky's approaches are especially suited for this because he turned at his time from an individualistic to a more sociocultural perspective of learning. Learning was placed into a different context, possibly similar to that of an exchange program

Thus at first the central foundations of Vygotsky will be clarified. The concept of the "zone of proximal development" will be discussed and the relationships between learning and culture will be explained.

Socio-Cultural Learning

Based on Vygotsky a theoretical framework of "socio cultural learning" was acquired. These construct represents a theoretical formation, correspond to the process of learning.

The central construct of Lev Vygotsky's work about how individuals learn, was the zpd (zone of proximal development). Essential was to comprehend interrelationships between social species in their development of mind (vgl. Vygotskaja & Lifanova, 2000, p. 78). The zpd is based on how Vygotsky understands learning. For him to learn means „promoting subsequent higher levels of development“

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The research project consists of several research steps with the objective to investigate the subject of research systematically from different perspectives. To analyze the exchange program, a qualitative interview study was conducted.

Overall, the research literature of exchange programs often criticizes the methods which have been used (Edwards, Piachaud, Rowson & Miranda, 2004, S. 689). This refers to possible biases and confounding variables. The underlying examination attempted to minimize this interference. Therefore it was necessary to use qualitative interviews in first place to clarify processes within the present field of research.

The examined subject-specific competences related to the competence catalog of the Tuning project for physicians (Cumming & Ross, 2007, p. 636). The tuning program understands itself as an "initiative [which was] funded by the European Commission to develop learning outcomes / competences for degree program in Europe and to promote harmonization in the Higher Education Sector" (Cumming & Ross, 2007, p. 636). Therefore the tuning project has formed competence catalogs for different occupational fields e.g. medicine. Due to the high relevance of the competence catalogs for practice, it is advisable to use them as recourse to detect competences. Since there are difficulties to define competences exactly it helps to use a competence catalog created with much effort. In the qualitative interviews this competence catalog was used to discover if participants of exchange programs have a gain in subject specific competence.

Therefore Physicians who were involved as former participants in the exchange program between

Jimma University, Ethiopia and Ludwig-Maximilians University, Germany were interviewed. There was a total number of N = 5 people interviewed, one woman and four men. The age range was from 26 to 32 years. The time period of the interviews was from April to June 2009. Overall, the duration was 45 to 65 minutes. Two interviews were face-to-face interviews and three were conducted by telephone.

The experiences of these participants belong to the longer past (around 8 years) and it was expected that they can relate with the necessary distance on their experiences. It was the assumption to find long term effects, because of the long time period between there stay in Ethiopia and the interviews.

Problem-centered interviews were chosen to be the best for the survey. The interviews were theory-based manual-guided and the data-analysis was conducted with qualitative content-analysis (Mayring, 2008). In contrast to the narrative interview, in which a scientific concept was created after the interview, the problem-centered interview was formed by the scientific concept which was conducted before (Lamnek, 2005, p. 361).

Thus, a specific interview guide was written based on the theoretical considerations described so far. The guideline was tested with regard to the intelligibility of the questions of time and the reasonable sequence of questions. Overall, the manual consisted of 31 open questions, intervening short explanations, and a small quantitative survey. The content of the questionnaire was divided as follows:

general conditions and previous experience:

Expectations and goals:

Experiences and impressions:

Important experiences:

Problems or challenges:

Impressive Experiences:

Contact with natives:

Effects and changes:

Tuning „Level 1“ competences:

12 Level 1 learning Outcomes:

education courses

The qualitative content analysis according to Mayring (2008) was used as a deportation proceeding. The content analysis of Mayring verifies and explains the text material methodologically strictly. The material was divided into units and has been processed in stages. Qualitative content analysis is essentially based on a predefined category system. This category system was conducted before analyzing the data.

The entire analysis proceeds were conducted from an initial low level of abstraction to a higher of generalization. The aim was to get closer to a theory-based generalization. Therefore the analysis of the findings is visualized by a table.

Result

First it was important to examine whether the assumption is applicable, that the participants of the exchange with Ethiopia have learned socio-culturally. This is the requirement for the investigation of all further assumptions concerning this inquiry. In the next step the results of the qualitative interviews used to determine, if the socio-cultural learning in Ethiopia has an influence on subject-specific competencies of physicians. The tuning competency catalog was used for this purpose.

Evidence to socio-cultural learning in exchange programs

In the theoretical framework, the approach of Vygotsky has been used as a theoretical model to explain socio-cultural learning. Central core theses of this theoretical approach have been used to explain the learning process in exchange programs.

Based on statements from the interview of the participants, it was possible to comprehend, that the social interaction, the increased competences and the mentality of local people as teachers were crucial for the learning process. The perceived differences between the two cultures and the different kind of place of learning seem to be important intermediaries of learning. As an example, Interviewer C can be mentioned, who commented on this "by interacting with locals, I learned something that I would not have learned otherwise".

Overall, the qualitative findings show, that most participants in the exchange program indicated, that they had learned socio- culturally within the exchange. It has been determined that the learning process is initiated by the perception of differences between the current attitudes and opinions in its private and professional groups and the foreign social environment.

Influence of socio-cultural learning on subject-specific competencies

The results, to what extent subject specific competences are achieved through exchange programs in socio-cultural learning, is based primarily on the drafted catalog of competences of the "Tuning outcomes of medicine" (Cumming & Ross, 2007 p. 637). The analyzed and abstracted findings of the Level 1 learning outcomes of the qualitative interviews are illustrated in table 1.

Table 1: Evaluation of the outstanding questions concerning the level 1 learning outcomes concerning reported gains

Tuning Level 1 Outcomes	person A	person B	person C	person D	person E	overall
carry out a consultation with a patient	Physicians are not speaking with there patients	Much contact with the patient, diagnoses I've never seen before. But no significant gain	Difficulties, because patient contact has not played a role	Only partly, rarely questions to the patient	Not learned much because of language barriers. Altogether, this is not taken place in Ethiopia	If, then only minor increase - Language Barrier - Patient contact plays no role
assess clinical presentation, order investigation, make differential diagnoses, and negotiate a management plan	no gain	Differential diagnosis a little, but not yet benefited, In the other cases no gain	no gain	no gain	Germany: in training little personal responsibility Ethiopia: you get patient himself (you have to carry the entire sequence itself) negative: a lot of responsibility with little experience	Up to E, no gains For E important point. The largest gains
Provide immediate care of medical emergencies,	no gain	no gain	no gain	no gain	one can learn very much, also because in Germany	Except E no gains

including First Aid and resuscitation					you are not allowed to do it	
Prescribe drugs	no gain	no gain	no gain	no gain	You have to make it on your own, for the German system only medium gain	Except E not gain
carry out practical procedures	no gain	no gain	no gain	no gain	In contrast to German education more because it is really needed and not as in Germany, where it disturbs more.	Except E not gain E In comparison to Germany much gain
communicate effectively in a medical context	Gain because one has to speak English	much discussion on specific systems, syndromes at both sides. How it is in Ethiopia	Communication in general, yes, medically a little	little	Little communication with patients; With colleagues yes, especially in emergencies	the most gains
apply ethical and legal principles in medical practice	no gain	no gain	Most likely, growth to speak at eye level and in dealing with patients	no gain	In ethical principles they are just not interested, but one learns to appreciate it in reverse in Germany	little gains,
assess psychological and social aspects of a patient's illness	Just a little bit, patients from other culture	High gain, syndromes have different significance, and how to deal with it and how to declare the patient	In the villages, a little learned by seeing the living conditions and hygienic conditions	no gain	Is not taken seriously, Social environment only a little bit	Three had gains, E barely
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		patient				
apply the principles, skills and know-ledge of evidence-based medicine	no gain	no gain	no gain	no gain	Tried to carry out but is difficult, it is not possible there	no gains
use information and information technology effectively in a medical context	no gain	In the German assistance yes but rather not extremely	Seen how difficult it is to get information	No gain in the Medical Context	Little, because information is only sparsely	no gains
apply scientific principles, method and knowledge to medical practice and research	no gain	no gain	no gain	no gain	Research does not exist, no gain	no gain
work effectively in a health care system and engage with population health issues	no gain	little gain	no gain	no gain	Working independently, to explore disease areas that are not important for germany (areas such as tropical medicine)	little gain

Based on this results it may be noted, by asking about gains in regard of the specific tuning outcomes only minor implications can be found. But looking at the statements of the Interviewees regarding the open Questions, there are a variety of statements which can be attributed to gains in the field of the specific tuning outcomes.

From the qualitative findings regarding the question to what extent the socio-cultural learning in exchange programs has an impact on the acquisition of specialized skills, following can be noted:

The result of the five qualitative interviews indicates the difficulty in determining effects by using the level 1 outcomes. It turned out to be much easier when the participants were able to report freely from their experiences. Considering the statements of the interviewees, there were statements, which suggest a variety of influences on subject-specific competencies. Most respondents reported gains in the area of doctor patient consultations. Overall communication and interaction with locals is most important for the participants of the exchange with the Jimma University.

Discussion

In the following section, not only the question appears if the exchange program has an impact on the competences of the participants, but it is also interesting which learning process leads to these results.

In this study it was demonstrated that the socio-cultural learning in exchange programs is characterized through the process of mirroring. By interacting with local people there is a raising awareness of the

difference between ones attitudes and opinions and those of the locals. Participants are confronted with challenges and situations of crisis, so that this leads to a learning process. Gutierrez and Stone (2000) and also Engeström (1986) illustrate this point, as already shown in the theoretical part, thus it can be triggered by raising awareness of uncertainties and crises. Crisis means the questioning of its own position by reflecting on the foreigners, the deviants. There is a change in perspective, which plays an important role in successful learning, especially in socio-cultural contexts. These learning mechanisms could be identified in the exchange program between the Jimma University in Ethiopia and the Ludwig-Maximilians University Munich.

After having discussed the processual aspect of learning, now the results of learning, the so called outcomes, are discussed. It is primarily adjusting to the doctor - patient relationship, where gains were described by the respondents. Through the experience of another doctor- patient relationship in Ethiopian Hospitals, participants are receiving an insight into how much important this area is for the medical practice.

At the same time they will be clear in mind of current practice in Germany. This shows the learning mechanism that is triggered by differences. It is remarkable that the interviewees reported mostly gains in the area of doctor patient interaction and on communication with colleagues. This specific communication competence has recently become much more important in medical education as well as it appears to be particularly important for clinical practice (Cumming & Ross, 2007). This is also the area which was increasingly focused through the introduction of a new Medical Licensure Act in Germany launched in 2003 (Güntert, Wanner, Brauer, and Stobrawa, 2003, p. 22).

Looking at the different increases, it is possible to find similarities between them. The areas are characterized by interaction. It is both the interaction between doctor and patient and the professional interaction with other doctors which are covered by these gains. Therefore it can be considered that staying in Ethiopia is leading to a higher self-assessment, when it comes to the ability to interact with others. Remarkable is the close connection between the learning process itself and what is being learned. In other words, it means that the participants achieve a gain in interaction by interacting through socio-cultural learning.

The requirement of Balandin, Lincoln, Sen, Wilkins and Trembath (2007) through medical exchange programs especially outcomes should be promoted, which have a high relevance especially for their own health care system, is fulfilled in the present results (Balandin, Lincoln, Sen, Trembath & Wilkins, 2007, p. 786). As the research could show, the participants had gains in communicative competences. This again is highly important for medical practice in Germany.

The main contribution Vygotsky made for the explanation and understanding of learning was that he stressed out the importance of mediation, e.g. the mediation of tools. The effect of mirroring ones cultural background on the foreign culture and consciousness of diversity is also a subject of mediation process. The local people in an exchange program can be understood as mediator, as a "mediation tool". These considerations are an extension of Vygotsky's ideas, because here in the exchange program two main approaches are linked together. On one hand there is the role of locals as an intermediary, on the other hand, there are the experienced differences between cultures, which set in motion a learning process. According to Vygotsky the place of learning or the learning environment is a very important factor for learning.

When discussing learning locations it has to be distinguished between the place of learning, and where it is applied. For the organization of international exchange programs the question raises, where learning programs should take place in the most useful way. This current examination provides evidence that the learning process at such an extraordinary place like Ethiopia, causes processes which have particular importance to meet the requirements in a globalized world.

In total the use of the Tuning outcomes, as an already elicited catalog of competences, turned out to be helpful only as evaluation tool of the free statements of the interviewees. For future studies it would be necessary to explore these results by using quantitative analysis.

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